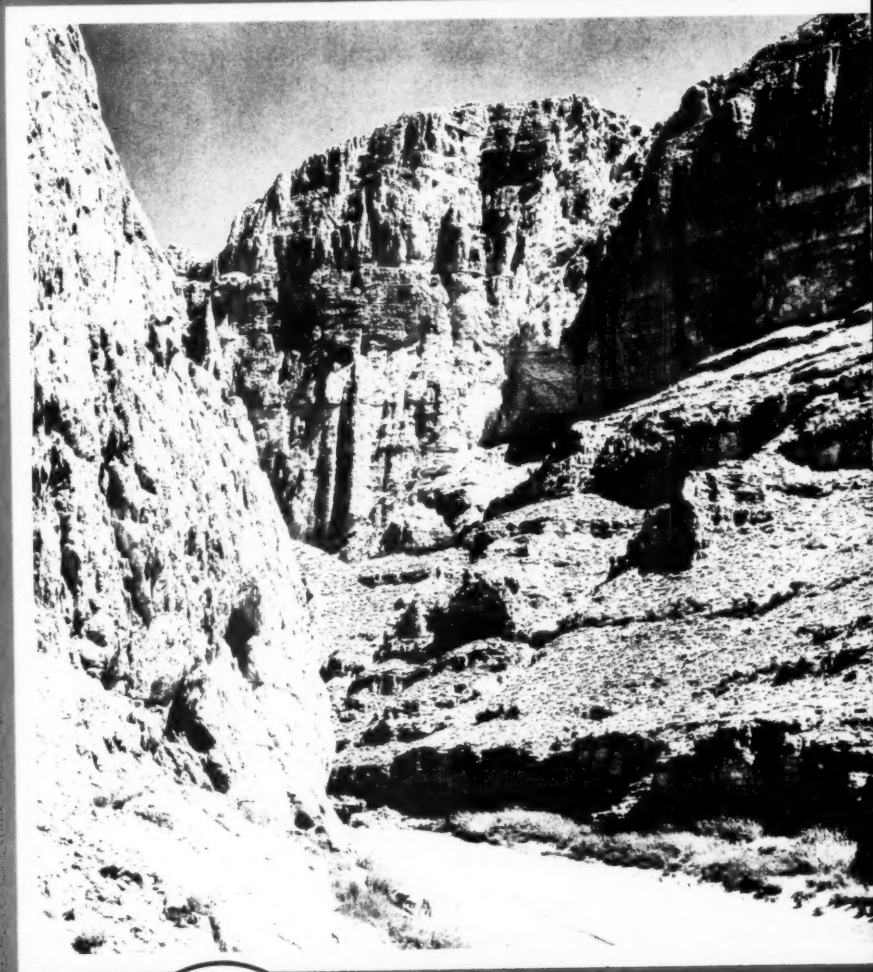


# GEO TIMES

Professional News Magazine



**September 1959**

Vol. IV, No. 2

Published by the  
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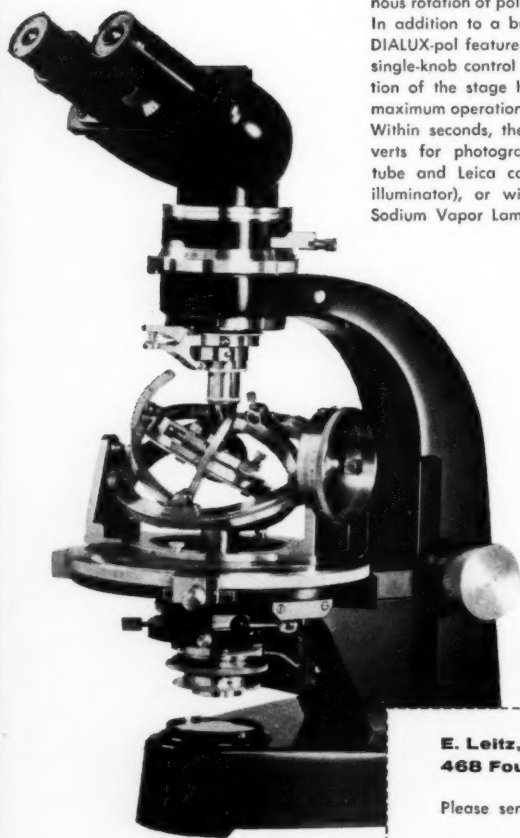
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# Calendar

Cooperation of Society Secretaries in supplying meeting notices for *GEOTIMES* calendar is requested.

- Aug. 30 - Sept. 12, 1959—INTERNATIONAL OCEANOGRAPHIC CONGRESS, AAAS, UNESCO and ICSU special committee on oceanic research cooperating; United Nations Bldg., N.Y.
- Oct. 4-7, 1959—AIME: Soc. Petr. Engrs., Fall Mtg., Dallas, Texas.
- Oct. 8-10, 1959—AAPG: SW Fed. of Geol. Soc's., 2nd Ann. mtg., Lubbock, Texas.
- Oct. 8-10, 1959—NINTH ANN. EXPLORATION DRILLING SYMPOSIUM, University Park, Pa. Co-sponsored by departments of Mining at Pennsylvania State University, Colo. School of Mines and Univ. of Minnesota.
- October 8-10, 1959—OPTICAL SOC. OF AMERICA, Ann. Mtg., Chateau Laurier, Ottawa, Canada.
- Oct. 12-14, 1959—EIGHTH NATIONAL CLAY CONFERENCE, Univ. of Oklahoma campus, Norman.
- Oct. 22-23, 1959—AIME: Los Angeles Basin Sect., Fall Mtg., Huntington Sheraton Hotel, Pasadena, Calif.
- Oct. 27-29, 1959—AIME: Joint Solid Fuels Conf., Netherlands Plaza Hotel, Cincinnati, Ohio.
- \*Oct. 27-31, 1959—AAPG: Mid-Continent-Kans. Geol. Soc. Mtg., Broadway Hotel, Wichita. Two one-day field trips of Pennsylvanian and Permian rocks of south-central Kansas; write: Merriam, Univ. of Kans., Lawrence.
- Oct. 29-30, 1959—AIME: Oil Recovery Symposium on SW Texas, Corpus Christi, Tex.
- Nov. 1959—INTERNAT. ATOMIC ENERGY AGENCY, Conference on Disposal of Atomic Waste, Monaco. Write: Agency, c/o Kaerntnering, Vienna I, Austria.
- \*Nov. 2-4, 1959—GSA: Ann. Mtg., with Pittsburgh Geol. Soc., Penn-Sheraton Hotel, Pittsburgh, Pa. in conjunction with PS, MSA, GS & SEG. Field trips before and after the meetings, also local excursions. Write: Buckwalter, U. of Pgh., Pittsburgh, Pa.
- Nov. 9-12, 1959—SEGg: Ann. Mtg., Biltmore Hotel, Los Angeles, Calif. Jointly with Pacific Section of AAPG on Nov. 12.
- Nov. 11-13, 1959—GCAGS: Houston, Texas.
- Nov. 12-13, 1959—AAPG: PACIFIC SECT., Biltmore Hotel, Los Angeles, Calif. Jointly with SEGg on Nov. 12.
- Dec. 4-5, 1959—NAGT: ANNUAL MEETING, Ohio State University, Columbus, Ohio.
- Dec. 12-13, 1959—OKLAHOMA ACAD. OF SCIENCE, Earth Science Sect., Ann. Mtg., Weatherford, Okla.
- Dec. 26-31, 1959—AAS: Ann. Mtg., Chicago.
- Jan. 11-13, 1960—FIRST INTERNAT. SYMPOSIUM on Arctic Geology, sponsored by Alberta Soc. of Petrol. Geologists; Calgary, Alta., Canada.
- Feb. 14-18, 1960—AIME: Ann. Mtg., Hotel Statler & Hotel McAlpin, New York, with SEG.
- April 3-8, 1960—ENGINEERS JOINT COUNCIL, 6th Nuclear Congress, New York. Write: Council, 29 W. 39th St., New York 18.
- April 25-27, 1960—CIM Ann. Mtg., Royal York Hotel, Toronto, Canada.
- April 25-28, 1960—AAPG-SEPM: Ann. Mtg., Chalfonte-Hadden Hall, Atlantic City.

May 2-3, 1960—AIME: SOC. PET. ENGRS., Wichita Falls, Texas.

May 26-27, 1960—AIME: Rocky Mountain Pet. Sec's, Calgary, Canada.

July 25-Aug. 6, 1960—JUGG: General Assembly, Helsinki, Finland. Inquire: Sec. Gen. G. Laclavere, 30 Avenue Rapp, Paris 7, France.

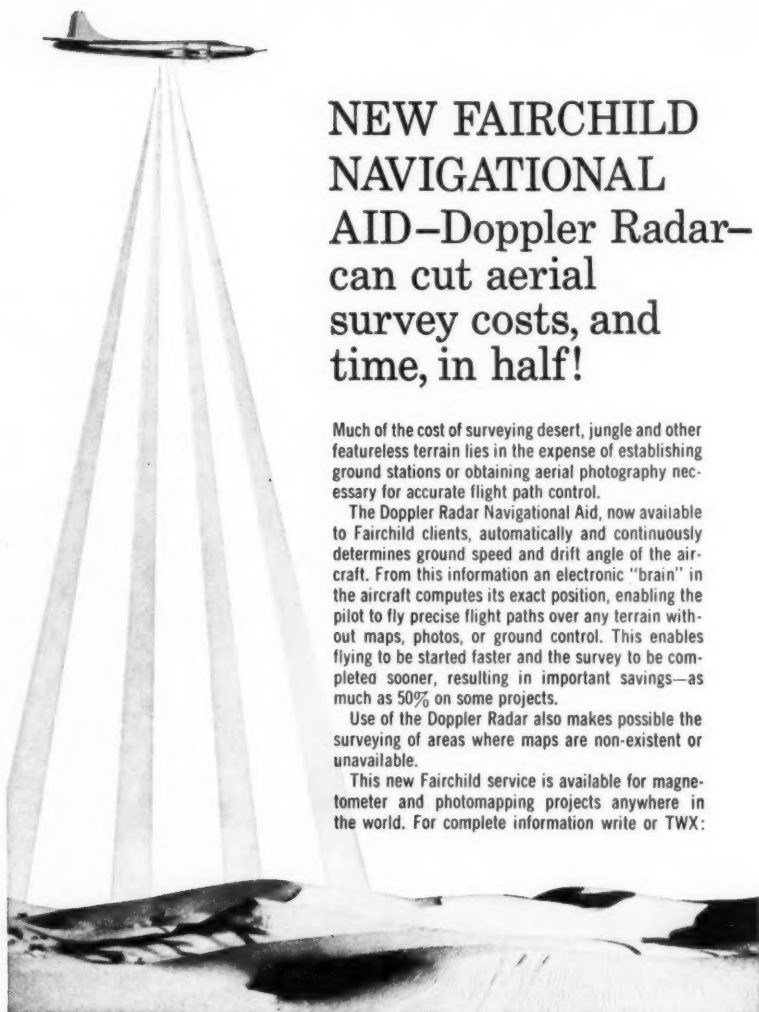
\*Aug. 6-12, 1960—19th INTERNATIONAL GEOGRAPHIC CONGRESS, General Assembly of the IGU and meetings of the IGU Commission, Stockholm, Sweden. Inquire: The International Geographic Congress Postack Stockholm 6, Sweden.

\*Aug. 15-25, 1960—XXI INTERNATIONAL GEOLOGICAL CONGRESS, to be held at the Mineralogical Geological Museum of the University of Copenhagen in Denmark. Field trips before and after the meetings.

## 1959 SCHEDULE OF FIELD TRIPS

For additional field trips held in conjunction with meetings, see those items marked with an asterisk under meeting calendar.

- Sept. 9-11—WYOMING GEOL. SOC., group field trips to Big Horn Basin, Wyo. Write: Leverett, Box 875, Thermopolis, Guidebook.
- Sept. 10-12—ALBERTA SOC. OF PETR. GEOLOGISTS, 9th Field Conference. Technical session Sept. 10, trip to Moose Mountain Sept. 11, trip to Drumheller-Sept. 12.
- Sept. 10-12—IAPG: field trip and camp out in Wasatch-Uinta Mtns. area of Utah. Write: John Osmond, Box 34, Salt Lake City, Utah.
- Sept. 12-13—FRIENDS OF THE PLEISTOCENE, Rocky Mtn. Sect., field trip to Wind River Mts., Pinedale, Wyo. Write: Richmond, Denver Federal Center.
- Sept. 13—ILLINOIS STATE GEOL. SURV., field trip to Silurian of Whiteside and Carroll Co's., Ill.
- Sept. 26—NORTH TEXAS GEOLOGICAL SOC., field trip covering Upper Permian and Quaternary of North Texas. Write: Oliver Halbert, 525 Staley Bldg., Wichita Falls, Tex.
- Early Oct.—UTAH GEOL. SOC., field trip of strat. struct. & economics of S Quirrh Range, Utah; write: Rigby or Bissell at Brigham Young Univ., Provo, Utah. Guidebook.
- Oct. 2-4, 1959—10th ANN. OHIO INTERCOLL. GEOLOGY FIELD CONF., field trip in Pendleton and Pocahontas Cos., W. Va., based at R. W. Whipple Field Sta., Bartow, W. Va. write: W. G. Steel, Marietta Coll., Marietta, Ohio.
- Oct. 4—ILLINOIS STATE GEOL. SURV., field trip of Coal Measures of Clark and Edgar Co's.
- Oct. 7-10—ROCKY MOUNTAIN ASSOC. GEOL., field trip of Cretaceous of western Colo., a Cretaceous symposium of Colo. Write: Kretz, 722 Patterson Bldg., Denver. Guidebook.
- Mid-Oct.—TRI-STATE GEOL. FIELD CONF., field trip of Cambrian & Ordovician of Driftless area, SW Wisc.; write: Cline, Univ. Wisc., Madison, Wisc.
- Oct. 15-17—NEW MEXICO GEOL. SOC., general geology of West Central New Mexico; write: NMGS, Box 27, Socorro, N.M. Guidebook.
- Oct. 17-18—NEW ENGLAND INTERCOLL. GEOL. CONF., field trip to cover Taconic sequence in W. Vt., Vt. marble belt, and Foreland sequence E of Lake Champlain; write: John B. Lucke, Univ. Conn., Dept. Geol., Storrs, Conn. Guidebook.
- Oct. 18—ILLINOIS STATE GEOL. SURV., field trip of Coal Measures of Washington Co., Ill.
- Nov. 5-8—WEST TEXAS GEOLOGICAL SOCIETY, field trip to Val Verde Basin of Terrell, Pecos, and Val Verde Counties, Texas. Write: E. L. Dillon, Box 1509, Midland, Texas. Guidebook.



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# This Month in GEOTIMES



Professional News Magazine

Published by THE AMERICAN GEOLOGICAL INSTITUTE

Robert C. Stephenson,  
EDITOR

Kathryn Lohman  
CIRCULATION MANAGER

VOL. VI, No. 2

SEPTEMBER 1959

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## **INTRODUCTION TO THE THEORY OF SOUND TRANSMISSION: With Applications to the Ocean**

By C. B. OFFICER, Rice Institute. *McGraw-Hill International Series in the Earth Sciences*. 284 pages, \$10.00

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# Instant Geologists

A cannibal chief is reported to have solved the nutritional problems of his people with a new powder—"Instant People." By the same token the industries of America might well devote some of their vaunted research dollars into developing "Instant Geologists." This will permit them to take geologists off the shelf when and where they want them, add water and come up with geologists needed at the moment to solve their immediate exploration problems. It is essential that this "Instant Geologist" concoction be produced as cheaply as possible so that the individuals who are "brewed up" to meet the emergency can be poured down the drain as soon as the need is passed, without particular effect on the balance sheet.

The problem of employment in the geological profession is no joking matter—too many well-trained geologists are job-hunting these days and many who are unemployed are drifting away from their chosen profession. At a time when there is a clamor for qualified scientists and engineers the employment outlook for geologists is still dismal.

The same industries which four years ago were reaching into the ranks of the undergraduates to recruit "professional geologists" have continued in recent months to drop well-trained, experienced men from their payrolls. What is the reason for this big swing? A few cents difference in prices, current supplies and present business uneasiness are contributory to the problem. If prices on these commodities were to edge upward, or government regulations were to create a new atmosphere, or a few well-chosen international incidents were to knock the reserves picture off dead center, industry would be right back on the merry-go-round trying for the brass ring. Government employment of geologists is currently at a low ebb too, because the concern over long-range resource problems is never as popular to elected officials as are the more spectacular and infinitely more costly crash programs in times of emergency.

Geologists are people—they can reason. The promising young people who will be the geologists of tomorrow can also think. Are we to assume that the unemployed geologists of today are going to stay unemployed in a period of booming economic development and that the promising young scientific talent—the hope of tomorrow—will move into an area of science where employment is uncertain?

This problem is not here today and gone tomorrow. Some of the older members of the profession are witnessing their second or even their third geological recession. The question is—what do we do about it?

The status of geology and geologists will suffer immeasurably if the profession accepts its current plight without an effort to analyze and remedy the cyclic weakness of geological employment.



OUR COVER

Bouquillas Canyon, Big Bend Nat'l Park, on the Rio Grande in Texas. The walls here are 1600 feet high and the name Bouquillas, "little mouths," refers to the narrow gorge. Photo by Josef Muench.

The AMERICAN GEOLOGICAL INSTITUTE is a non-profit professional service organization established and managed by the scientific societies in the fields of geology and geophysics in cooperation with the National Academy of Sciences-National Research Council. It is the instrument of the profession serving and advancing the welfare of the geoscientist in matters relating to education, professional responsibilities and government relations. It is an active member of the Scientific Manpower Commission. It also functions in the stimulation of public education and awareness of the earth sciences, through career literature, the scouting program and other channels of communication.

GEOTIMES is the news magazine of the geological sciences. It reports on current events in the earth sciences, public education and public relations efforts throughout the profession, as well as appropriate legislative and governmental issues. It announces scholarships, fellowships, publications and new developments. It provides a forum for discussion of timely professional problems, and affords a common bond between the many specialized groups within the earth sciences.

# UNEMPLOYMENT *and* OUR MORE BASIC PROBLEMS

A timely, thoughtful analysis  
of employment problems in  
geology—present and future

by DR. LEWIS G. WEEKS, *President*  
*American Association of Petroleum Geologists*

Shortly after I received notice of nomination for the Presidency of the American Association of Petroleum Geologists, I began to receive communications of various kinds urging me to do something quickly to relieve the unemployment among geologists. I am still receiving these. Some of the letters mention certain steps, such as licensing, accreditation, etc., as a panacea for our ills. The situation is usually pictured as very critical and headed for worse. However, as further inquiry brought conflicting reports, I decided to make my own study in so far as time permitted.

I have found that an undue amount of unemployment does exist among geologists. The situation is anomalous for a period like the present, which is one of widespread, even worldwide prosperity. Secretary of Labor Mitchell summed up the situation very well in an open letter to graduates of 1959, printed in the May 25 issue of *U.S. News and World Report*. He described the employment situation in 15 major fields; they include just about every branch of science, engineering, business, mathematics, teaching, medicine, federal service, law, and even forestry and library work. In every field or field branch, *with the single exception of geology*, the Secretary reported the demand for graduates as ranging from good to strong and likely to increase. With regard to the earth sciences, he stated:

*"Newly trained geology graduates can expect to meet considerable competition for professional jobs.*

*"Of the bachelor's degree graduates, those from schools with strong curricula who rank high in their class will have the best opportunities for employment, principally in exploration work for the oil industry in the U.S. or overseas.*

*"Those who have only minimal training will probably find it necessary to begin in semiprofessional jobs or to obtain work outside the field of geology. . . ."*

The words of Secretary Mitchell concerning geology are significant. They confirmed for me my first reaction to the clamor about unemployment, a reaction which had its roots in a feeling that has grown during my career. It is this: Not only does adequate training, soundly based, both in depth and breadth, tend to insure employment, but better yet as will be observed later, it greatly increases the opportunities for jobs in the particular field. I early concluded that while we should do what we can to alleviate the immediate situation, the real cure is a long range process; moreover, it is one that calls for soundly conceived objectives and determined handling.

I had planned on a somewhat comprehensive fact-finding survey. As there were objections to this, I decided to make my own survey in a simpler form. On June 25 I addressed a questionnaire to 60 of the principal university and college geology departments in the U.S.A. and Canada. I asked for information on: the number who received degrees in June, or earlier in 1959; the number who obtained jobs in petroleum geology; also in other fields; the number who took jobs abroad; the number who plan to continue their education, etc. The information in all categories was broken down as to bachelors, masters, and doctors.

Of the 60 universities canvassed, 43, or 70% of them have replied to date. In some cases my letter may have arrived too late to catch the staff on the job. The replies, however, represented an excellent cross section of the schools. For example, the picture presented would be essentially the same if I had considered only the first half of the replies received. Of the replies, 38 are from U.S. universities and 5 are from Canada. Most of the returns were complete and very informative; a few were not. As the survey was made in late June, the results are essentially those of graduation



time. Some have probably obtained jobs since or will do so in the near future. The following are the results of the survey, as exactly as I can report them.

The total number of all degrees granted at the schools replying is 1215. These consist of 786 bachelors, 314 masters, and 115 doctors.

- Of the 1215, a total of 635 or 52% had obtained jobs.
- Of the 635, 249 or 39% obtained jobs in petroleum geology and 386 or 61% obtained jobs in other fields.
- Of the 635, a total of 33 or 5% obtained jobs abroad.
- Out of 786 bachelors, 69 or 9% were taking military duty.
- Out of 314 masters, 9 or 3% were taking military duty.
- Of the bachelor graduates, 28%, and of the masters, 26% were reported as planning to continue their education. Some of these had, however, taken jobs for a time, or were going to comply first with their military obligations.

No data were available to the universities on 210 or 17% of the total of 1215. Of the 210, 190 are bachelors, 16 masters, and 4 doctors. Some of these may have found jobs; some may be called to military duty; others may plan to continue their education; probably some are unemployed.

The following summarizes the data of principal interest with respect to employment:

	Bach.	Mastr.	Dr.	Total
Number of degrees	786	314	115	1215
Number who had jobs	312	212	111	635
Percent who had jobs	40%	68%	97%	52%
Number with jobs:				
in petroleum geology	116	120	13	249
in other fields	196	92	93	386
Percent of total jobs:				
in petroleum geology	37%	57%	12%	39%
in other fields	63%	43%	88%	61%

Although some of those without jobs at the time of the survey will no doubt obtain jobs, I think that all who read the figures will agree that the picture is not a satisfactory one. Moreover, it reflects within our profession an all too prevalent inadequacy of training, already mentioned, about which we also need to be seriously concerned. Before I go more fully into these matters, it is of interest to include some of the comments of the respondents of the questionnaire.

An eastern university reports: "*We had no trouble getting jobs for Ph.D.'s*". The returns show that this is pretty well true all over the country, as 97% of the Ph.D.'s had jobs at the time of graduation.

A mid-western university reports: "*All our men with advanced degrees were*

*placed last year, and this year the job situation is better*".

Another university in the mid-west reports that few of their bachelors "*go directly into geology*". Most of those that are serious about geology take at least a fifth year, here or elsewhere. For the first time in years we have sent more students into nonpetroleum employment than to the oil companies". The returns show that this is the general situation, with only 39% of the much fewer jobs supplied by the petroleum industry.

A college in the same area stated: "*This was the toughest year we have seen in trying to find a position in industry for the student with a Bachelor's degree*".

From one western university comes the comment: "The employment situation, especially in the petroleum industry, is very poor . . . Men with a Bachelor's degree have a very difficult time and generally only the better students with a Master's readily find employment. We have tried to overcome the present situation by placing men in allied fields . . . One result of the 'slump' is a large increase in enrollment in the graduate school . . . There is a far greater tendency for graduates who have not fulfilled their military service to 'get it over with' at once and hope the situation in the meantime will have improved".

One of the larger departments in the south had these comments to make: "*Jobs for Ph.D. and M.A. degree holders seem plentiful, both domestic and foreign. Jobs for B.S.-B.A. degree holders seem almost nonexistent, either domestic or foreign. The few jobs for B.S.-B.A. people seem to be available in service companies.*"

"*Geophysical positions at any level except Ph.D. seem nonexistent.*"

"*Ph.D. positions are fantastically high.*" Starting pay for doctors as high as \$650 to \$800 was mentioned.

"*It seems to me the real problem facing geologists is, what is the supply about three years from now? At the sophomore level our majors are now diminished greatly. For example, two summers ago we had 75 in mineralogy. Last summer we had 44, and this summer we have 7 students in this sophomore required course. Similar drops are occurring elsewhere.*"

A couple of schools in the west report extremely poor employment conditions, whereas others in the same region show fair to very good records of employment. One university in the area indicated that they were unable to fill all the job openings offered.

Out of the total of 144 receiving degrees from the five reporting Canadian uni-

versities (104 bachelors, 27 masters, and 13 doctors), all but two had jobs at graduation. Comments indicated there were not enough graduates to meet the demand. One said that no let-down of employment had been experienced.

#### GRADUATE TRAINING PREFERRED

The survey results show clearly the strong preference among oil companies for men with masters' or doctors' degrees. That there is a strong preference among oil and also mining companies for men and women of advanced training shows up particularly in times of slack employment, like the present. Otherwise, there would be the poor showing among the bachelors. And of course, the higher degrees are needed in teaching, research, and many industry jobs.

One southern school reports that all of their bachelors, masters, and doctors have had not one but many offers. The respondent goes on to say that "*all of these men, however, did have strong training in the basic sciences*". I cite this because I shall again and again come back to what I have been writing and saying *ad nauseam* for months past, that much of our present situation stems from the shallowness of our training as geologists. I want first, however, to discuss our immediate concern, that of the present unemployment.

The basic situation with regard to unemployment is one for which unfortunately we can offer no quick remedy, because it stems from causes over which we have little or no immediate control. The number of jobs being offered in oil finding is being rigidly restricted. Principal among the many causes of geological unemployment is the oversupply of crude. It is indeed ironic that the principal sufferer from unemployment today is the oil finder. Oversupply of crude has diminished exploratory incentive abroad, where supplies are greatest; in the U.S., because of low allowables and slow return on investments, exploration has been greatly curtailed and consolidated. This has resulted in a number of mergers, the closing of numerous offices, releasing of men, and a big slowdown in hiring.

#### PROMISCUOUS HIRING A PROBLEM

Promiscuous hiring of men in some years, and then for a period of years not employing even the best trained men is an unfortunate practice to which few companies are immune. We are told of cases but a few years ago of a recruiter announcing: "We'll take your entire graduating class". "In the middle 1950's, one respondent reports, "we were deluged with recruiters. Enough that any candidate

with the right number of hands and feet got a job. In other years, even outstanding men are not given a thought".

Industry seems to have little idea of supply and demand factors. One heavily recruited university reported that the general reply given on future demand, but shortly before the freeze, was that the geologist shortage would "continue indefinitely". The matter of future demand is naturally one of very real interest to the schools. The present flood of graduates and the mushrooming of geology schools, many of them ill or inadequately staffed, resulted in considerable part from misinformation.

There is a wide diversity of standards in the schools. A B.S. from one university may be superior to an M.S. from another. Likewise, grading standards differ. I recall very well that many Bachelor applicants for junior membership in A.A.P.G. had as many as 60 or 70 or more hours of geology, while some Masters had less than 60. On the other hand, the number of hours of geology may be very misleading without knowing something about the basic supporting training in other sciences, mathematics, English expression, etc., which are all fundamental to geology. There are, of course, some exceptional students who, although they got their start in a small college under one or two devoted teachers, have had the interest to follow this up until they became some of our more able geologists.

#### PENDULUM SWINGS BACK

But already the pendulum of supply of geologic talent is beginning to swing back and may, as in the past, swing again to the opposite extreme. For the first time in probably many years, as indicated in the survey reported in the May-June issue of GeoTimes, the number of junior majors in geology-geophysics has fallen below the number of graduating seniors. And the number of seniors itself represents a considerable leveling off from the rapid rise of previous years. While this reversal may bring some consolation both to unemployed and employed, patterns of this sort are not healthy for the schools, for industry, for the profession or for the nation. It is too much like that of a ship without a rudder.

Consideration has been given to plans for employment agencies for placing men in jobs. Under conditions like the present, where there are many looking for jobs and few jobs available, the employment agency is usually the last place an employer is inclined to go. A plan of this nature was, in fact, put into operation for a time at

A.A.P.G. Headquarters in Tulsa. It had no real success even in the years before 1958 when jobs were more plentiful.

#### AAPG EMPLOYMENT COUNSELLING

Experience gained from the plan just mentioned led the present A.A.P.G. Employment Counselling Committee under Olin Bell's chairmanship to change the emphasis from employment to counselling. Experience over several years has shown and is today showing that the most effective contacts and successes in employment are made at the local level, where the societies have been encouraged to set up local counselling committees. Some of these committees have had exceptional success in recent months in getting men placed through counselling. The national committee is, in consequence, encouraging all local societies to establish employment counselling committees.

The employment counselling committees have also embarked on a program of urging exploration managers to give geologists employment in nonprofessional jobs until such time as the men can be placed in geological work. This effort has met with better success than was expected, better than in an earlier period of oversupply of geology graduates when the same plan was tried.

The A.A.P.G. Employment Counselling Committee has also been asked to go ahead with plans for one or more panel discussions from the corporate, professional and academic viewpoints. The first of these will be held on Friday evening, November 13, at the Ninth Annual Meeting of the Gulf Coast Association of Geological Societies in Houston. All parties concerned will be well represented. The object is to bring these matters and the problems to the attention of industry and of colleges, and the Association membership. It is hoped that thereby a common understanding of the situation and problems can be realized, and logical steps be agreed upon to meet them. One of the objectives is to encourage employment on an even keel, rather than in strong spurts and stops as has been a widespread practice. Such a practice undeniably defeats any avowed policy that an employer may have of obtaining the best possible men; and it certainly breaks the most valuable thread in the fabric of an organization, that of its technical employees, by producing periodic age gaps. I am sure that many have witnessed the sad consequences of this policy.

If it is not industry's moral obligation to keep its employment of exploration and exploration research men on an even keel,

*(Continued on page 34)*

## **MANPOWER** *in a column -*

By **HOWARD A. MEYERHOFF**

*Scientific Manpower Commission  
1507 M Street, N.W., Washington 5, D. C.*

Washington is a rough place for a scientist. Accustomed to the dependability of natural laws, he is baffled, even frustrated, in the Never-Never Land where nothing is what it seems.

Take field exploration, for example. To the geologist, mineral exploration has been considered synonymous with research. The Department of Commerce equates it with research and development in the List of Essential Activities. The Selective Service System will consider deferment for any man of military age who is engaged in research, exploration, or development.

Now we discover that exploration is synonymous with production! On January 6, the Wage and Hour Division of the Department of Labor brought suit against a southern California consulting firm, demanding time-and-one-half pay for overtime worked by geologists assigned to the task of logging clients' wildcat wells. The defendant protested (1) that the men were professionals, not wage earners under the wage and hour law; (2) that the work performed was professional in character; (3) that the wells were exploratory; and (4) that the consulting firm had no stake in production, if any was obtained—all to no avail. The suit was settled out of court—the defendant paid.

At AAPG's suggestion, the Scientific Manpower Commission entered a protest to the Wage and Hour Division, and the case is now under post-mortem review. To date the findings are as follows:

a) Any activity connected with drilling for oil and gas, even if purely consultative, is regarded as part and parcel of "the production of goods produced for interstate commerce," hence subject to federal wage and hour restrictions. The courts have upheld this interpretation, with the single exception of a wildcat operation in Georgia.

b) Geologists and geophysicists are exempt from the provisions of the law only if they are performing professional duties. The Wage and Hour Division questions that geological interpretations based on well-logging are professional in caliber.

Are the lawyers and bureaucrats going to make all the rules and definitions? Except in court cases, this seems to be the first time the profession has concerned itself with the issue.

## **GEOLOGY TRANS-CANADA**

*By* LEWIS MILLER<sup>1</sup>

The second set of lectures chosen for the Canadian Broadcasting Corporation's new radio program, UNIVERSITY OF THE AIR, was an eight-lecture series by Dr. David M. Baird, entitled, *An Introduction to Geology*. This series, broadcast weekly between March 17 and May 12, 1959, followed a set of nine lectures in philosophy—the initial series in UNIVERSITY OF THE AIR.

UNIVERSITY OF THE AIR is specifically planned for listeners interested in adult education fare. The program name derives from the fact that lectures are intended to be at the same level as introductory university courses (they are unabashedly for a minority audience); lecturers are chosen primarily from university faculties, and their lecture series are based on themes to be found within university courses. We make no attempt to offer what could be considered a full university course, and so far we have not set examinations or given credits. Lecture series may be of varying lengths depending on the themes. Audience participation is sought by inviting listeners to send in questions or challenges, and the lecturers reply during brief question periods towards the end of the third and subsequent lectures in each series.

Prior to each series we issue a brochure to the growing number of listeners on our mailing list. This brochure (twelve thousand of which were issued for the Baird series) gives an outline of the series, biographical material about the lecturer, and a recommended reading list. Recently books of most of our series, including the Baird lectures, have been made available containing the complete set of lectures as broadcast. These paper-backs, of excellent quality we think, are issued approximately at cost, at seventy-five cents per copy. Three thousand of the Baird books have been published and at the rate they are now selling we are confident that we shall sell out the first printing.

Dr. Baird's series, like others in the UNIVERSITY OF THE AIR program, was broadcast on the Trans Canada Network of the Canadian Broadcasting Corporation. The radio network carrying the Baird series was comprised of eight CBC stations and thirteen private stations affiliated to the CBC for network service, extending from coast to coast, and covering five time zones. Because of time differences the programs, initially broadcast from 10:30 to 11:00 p.m. in the Eastern time zone, were recorded for delayed broadcast to other regions, thereby allowing for a favorable broadcast time in each zone. In addition to this wide CBC network coverage, Dr.

Baird's series was accepted for broadcast in the United States by WOSU (the Ohio State University station) and WYNC, New York.

Because of the nature of UNIVERSITY OF THE AIR—because of its being planned specifically for a minority audience—we have not been much concerned with audience ratings. We have been pleasantly surprised, however, by the immediate and enthusiastic reaction to the program and to the continued and growing support from listeners and radio critics. To our surprise we have even received favorable editorial notice in two leading Toronto newspapers. It seems impossible to get a figure of the total approximate number of listeners across Canada, but in the Toronto area only, although we have polled up to twelve per cent of radio homes listening, our average is consistently closer to five per cent. This would amount to approximately 1500 radio sets tuned in to the program (television is of course the big reason for the low rating of total radio sets listening in this area). Extrapolating from this figure it seems reasonable to suggest that approximately 15,000 radio sets in Canada are tuned in to the program for individual broadcasts—and this figure may be doubled because of our practice to rebroadcast these lectures in a morning period. This estimate does not include American listeners to the programs broadcast by WNYC, and WOSU, nor to the many listeners in

<sup>1</sup> LEWIS MILLER, Program Organizer, Talks and Public Affairs, Canadian Broadcasting Corporation.

the northern United States within range of our transmitters. About seven per cent of our mail comes from listeners just south of the Canadian border, and this mail comes from States from Maine to Washington. Considering that, on an average, each set has at least two listeners we consider that our "radio-classroom" would be the envy of any large university.

Listeners varied more widely in type and background than we had expected. A sampling of mail included letters from professors of diverse subjects, teen-age listeners, lawyers, servicemen, businessmen, medical doctors, clergymen, teachers, hospital patients, and many housewives. Indeed the response of housewives and others, some of whom found the night broadcasts a trifle too late for comfort, led us to rebroadcast our program in morning periods. An unexpected result of the morning rebroadcasts was mail from, among others, salesmen listening to their car radios. One of our most enthusiastic letters came from a Detroit public relations representative whose office mate had first heard our program on a morning rebroadcast from the CBC station across the river, and border, in Windsor. An amusing letter came from a Royal Canadian Air Force radiologist who complained about the doctors who from time to time interrupted his morning listening sessions.

The CBC was most fortunate in being able to get Dr. Baird for the series in geology. As one may imagine, it is far from easy to sustain interest in a single half-hour lecture-type radio broadcast (much easier on television, and easier still on the platform). The difficulties in sustaining interest for eight half-hour broadcasts are enormous. There are no gimmicks. Each broadcast stands or falls with the writing and "voicing"; and a failure early in the series is enough to lose a listener for the remainder of the lectures. Dr. Baird, however, was a rare find among people with little broadcast experience. His lectures, delivered in a pleasant baritone voice, were models of lucidity, and at the same time colorful, sometimes poetic in their treatment of his subject. Geology, I need not remind your readers, is largely a visual subject—a challenge for radio, particularly since there is no opportunity for the listener to dwell on sentences as they flash past—but Dr. Baird has an unusual faculty of description that enabled his listeners to follow with ease. In view of our thoughts in planning UNIVERSITY OF THE AIR, we were particularly pleased by a passing comment by one radio and television critic who was heard on a national network broadcast. Speaking of another



Professor David M. Baird (right) confers with CBC Presentations Officer Stephan Dale prior to a trans-Canada broadcast on geology.

science series, she remarked, "Baird's admirable talks on Geology in the UNIVERSITY OF THE AIR series . . . gave us a good background."

We of the CBC who have been associated with Dr. Baird in his series are not at all surprised at his professional and academic success. His most recent achievement has been his election as a Fellow of the Royal Society of Canada, an honor which he received in the spring of 1958. The Royal Society of Canada is a select body of distinguished Canadian scholars, and Dr. Baird's election, while still in his thirties, is an outstanding distinction.

Although he was born in 1920 in Fredericton, the capital of the eastern seaboard province of New Brunswick, David Baird spent the first six years of his life in China where his parents served as medical missionaries. He returned to New Brunswick for his early schooling and for his undergraduate training, graduating from the University of New Brunswick in 1941 with the degree of Bachelor of Science with First Class Honors in Geology. In 1943 he received the degree M.S. from the University of Rochester (N.Y.), and in 1947 the degree of Ph.D. from McGill University, in Montreal. He has served in various ranks of academic life, from teaching assistant at the University of Rochester, demonstrator and lecturer at McGill Uni-

(Continued on page 32)



## AAPG-SEPM MEETING

Atlantic City, N.J.  
April 25-28, 1960

Next annual meeting will be held at the Chalfonte-Haddon Hotel at Atlantic City, New Jersey, April 25-28, 1960. As usual, it will be a joint meeting with the Society of Economic Paleontologists and Mineralogists.

Because the meetings are to be held in the Atlantic area, special emphasis is being given to papers on new frontiers in the older producing areas and to untested or inadequately tested sedimentary basins east of the Mississippi. Hence a symposium on SEDIMENTARY AND TECTONIC FRAMEWORK OF ATLANTIC COASTAL REGION under chairmanship of J. R. Balsely and J. T. Hack is being organized as is a session on other eastern basins. Foreign developments will be covered in a session being organized by Hollis Hedberg. Research frontiers will be reported on in a symposium on PETROLEUM GEOCHEMISTRY under chairmanship of P. H. Abelson and in the A.A.P.G. Research Committee symposium, GEOMETRY OF SANDSTONE BODIES, under chairmanship of J. A. Peterson. A special feature of the 1960 meetings will be a symposium on THE MOHOLE under chairmanship of Harry Ladd and Willard Bascom. The S.E.P.M. Research Committee symposium, THE PALEONTOLOGICAL AND MINERALOGICAL EVIDENCE FOR POLAR WANDERING AND CONTINENTAL DRIFT, is being organized by A. C. Munyan.

In addition to these symposia of invited papers there will be a session of papers of general interest. The committee solicits contributions. Papers for a national meeting should be of general character, and be concerned with principles or concepts of exploration with regional studies and with geologic history and its bearing on known and possible petroliferous trends. Papers on local area or field studies are acceptable only if they can be tied to the regional picture and provide some critical insight into relationships likely to be found in other areas.

The Committee will welcome and scrutinize all contributions offered but reserves the right to refer any offering to the S.E.P.M. program committee, if this seems appropriate, or to a regional A.A.P.G. meeting.

Inasmuch as considerable time and effort are required to organize a program, especially in the few months prior to the meeting, tentative titles must be in the hands of the Technical Program Committee by October 1, 1959, and final titles

## Poldervaart Makes Extensive African Trip

Professor Arie Poldervaart, on sabbatical leave from the Department of Geology, Columbia University, will make an extended field study on the Precambrian of Africa and will spend several weeks visiting field localities of volcanic rocks in Italy, Greece and Iceland.

His African trip, beginning the latter part of this month and running until March 1960, is sponsored by the Directorate of the British Overseas Geological Surveys under Sir Frank Dixey. The work in South Africa is partially sponsored by the Bernard Price Institute but the larger part represents the final stage of a research project started by Dr. Poldervaart in 1947.

Dr. Poldervaart's research program in Italy, Greece and Iceland is integrated with a lunar program currently being conducted by Dr. Jack Green, a Columbia graduate, now working at Aero Space Laboratories in Downing, California.

Financial support for Professor Poldervaart's trip has come in the form of a Fellowship from the John Simon Guggenheim Memorial Foundation and a grant from the National Science Foundation.

and abstracts must be received not later than November 15. Potential contributors should send their titles and abstracts to F. J. PETTJOHN, Dept. Geology, The Johns Hopkins University, Baltimore 18, Maryland. Contributors to symposia should send titles and abstracts to persons organizing same. Those planning to contribute to the S.E.P.M. program should contact W. J. PLUMLEY, California Research Corporation, La Habra, California. All lantern slides used on the programs will be previewed by lantern slide editor.

The A.A.P.G. Technical Program Committee:

- PHILIP H. ABELSON, *Geophysical Laboratory, 2801 Upton Street, Washington 8, D. C.*
- J. BEN CARSEY, *Humble Oil & Refining Company, P.O. 2180, Houston 1, Texas.*
- CARLE H. DANE, *U. S. Geological Survey, Washington 25, D. C.*
- H. N. FISK, *Humble Oil & Refining Company, P.O. Box 2180, Houston 1, Texas.*
- J. M. HILLS, *Lloyd, Penn. Hills & LaSassier, 307 N. Big Spring, Midland, Texas.*
- HOLLIS HEDBERG, *Gulf Oil Corporation, Gulf Building, Pittsburgh 30, Pa.*
- JAMES A. PETERSON, *Shell Oil Company, 705 W. Municipal Drive, Farmington, New Mexico.*
- R. DANA RUSSELL, *Ohio Oil Company, P.O. Box 269, Littleton, Colorado.*
- F. J. PETTJOHN (Committee Chairman), *Department of Geology, The Johns Hopkins University, Baltimore 18, Maryland.*



## GSA MEETS IN PITTSBURGH

November 2-4

The Geological Society of America will hold its 1959 annual meeting in Pittsburgh, Pa., Monday November 2 through Wednesday, November 4. Headquarters for the meeting will be the Penn-Sheraton Hotel.

Meeting with the Society will be the Paleontological Society, the Mineralogical Society of America, the Geochemical Society and the Society of Economic Geologists.

Co-sponsors of the meeting are the Pittsburgh Geological Society, University of Pittsburgh Geology Department, Pennsylvania Geological Survey, Pennsylvania State University, West Virginia Geologic and Economic Survey and West Virginia University.

Program Chairman for the meeting is Paul H. Price, West Virginia State Geologist and the General Chairman is Melvin J. Hill of Gulf Research and Development. Chairman of Field Trips is R. B. Carter, also of Gulf.

Six field trips and four local excursions are planned as follows:

### FIELD TRIPS

1. *Structure and Stratigraphy of Central Pa. and the Anthracite Region.* Nov. 5, 6 and 7 (3 days). LEADERS: John T. Miller and Richard R. Conlin.
2. *Pennsylvanian of Western Pennsylvania.* Nov. 5, 6 and 7 (3 days). LEADERS: E. G. Williams, R. R. Dutcher, J. C. Fern, N. K. Flint.
3. *Monongahela Series, Pennsylvanian System, Washington and Greene Series, Permian System of the Appalachian Basin.* Nov. 1 (1 day). LEADER: Thomas Arkle.
4. *Mineral Deposits of Eastern Pa.* Oct. 30, 31 and Nov. 1 (2½ days). LEADERS: Arthur A. Socolow and Carlyle Gray.
5. *Glacial Geology of Northwestern Pa.* Nov. 5 and 6 (2 days). LEADER: Vincent C. Shepps.
6. *ENGINEERING GEOLOGY DIVISION FIELD TRIP.* Nov. 1 (1 day). LEADER: S. S. Philbrick.

### LOCAL EXCURSIONS

1. *Drake Well Memorial Park & Museum at Titusville, Pa.* Nov. 1 (1 day). LEADER: William S. Lytle.
2. *Trip Through a Local Coal Mine.* Nov. 2 (½ day). LEADER: Norman Flint.

## SECTION E PROGRAM

AAAS meets  
in Chicago  
Dec. 26-31

The annual meeting of the AAAS will be held in Chicago, December 26-31, 1959. As is traditional in the AAAS, emphasis will be placed upon the discussion of problems the solution of which involves several scientific disciplines.

Section E (*Geology and Geography*) is planning several symposia. One of these, dealing with quantitative geomorphology, is being organized by a committee headed by Charles R. Kolb of the Waterways Experiment Station, Corps of Engineers, Vicksburg, Mississippi. One and one-half days will be devoted to this symposium.

George B. Maxey of the Illinois State Geological Survey is organizing a symposium on the Great Lakes Basin, which will run for one and one-half days and will include papers by geologists, geographers, hydrologists, and engineers. This program is of particular interest because of the concern of many people in the area with water level fluctuations in the Great Lakes.

Several sessions of papers in geography are planned under the joint sponsorship of the Association of American Geographers and Section E. Professor Alden Cutshall of the University of Illinois, Chicago Branch, will coordinate the geographic papers.

At the annual Section E Smoker, the Vice-Presidential address will be delivered by Dr. Byron M. Cooper, Head, Department of Geology, Virginia Polytechnic Institute. Additional information on the Section E program may be obtained by writing Frank D. Whitmore, Jr., Secretary Section E, c/o U. S. Geological Survey, Washington 25, D. C.

3. *Trip through mill of U. S. Steel Co.* Nov. 4 (½ day).
4. *Tour of Gulf Research Center, Harmarville.* Nov. 2 (½ day).

The Annual GSA Dinner is scheduled for Tuesday night, November 3 and the address of retiring President, Marland P. Billings, will be presented at the Smoker on Monday evening.

Additional information on the GSA meeting may be obtained by writing Dr. Henry R. Aldrich, Secretary, Geological Society of America, 419 West 117th St., New York 27, N. Y.

## CONGRESS

corner

news and information on the

INTERNATIONAL  
GEOLOGICAL CONGRESS  
NORDEN

August 15-25 1960

Persons planning to attend the 21st International Geological Congress in Copenhagen, Denmark, August 15-25, 1960, were requested to submit registration forms which accompanied the Second Circular on or before September 1. To receive initial consideration for participation in pre- and post-Congress excursions it was necessary to submit deposits for field excursion choices together with the registration forms before the indicated September 1 closing date.

Geologists can still register for the Congress and can apply for field excursions which are still open. If they have not received the Second Circular they may address a request for this brochure to *Congress Travel, American Geological Institute, 2101 Constitution Ave., N.W., Washington 25, D. C.*

In planning for the Congress everyone will want to obtain a copy of *TOURIST IN DENMARK*, the Politikens Travel Guide prepared in cooperation with the National Travel Association of Denmark. This compact little guidebook provides in great detail all sorts of information on all of Denmark. It also lists six suggested tours of Denmark. This booklet can be obtained by Congress registrants free on request from the official Congress travel agency, *EUROPEAN TRAVELING SEMINAR, Room 901 Potomac Plaza, 2475 Virginia Ave., N.W., Washington 7, D. C.*

Some geologists may be considering a trip to Russia as a part of their Congress travel plans. These persons should obtain *SOVIET RUSSIA: A GUIDEBOOK FOR TOURISTS* by D. B. Mahin and R. M. Scammon from *Governmental Affairs Institute, 1726 Massachusetts Ave., N.W., Washington 6, D. C.*

A comprehensive guidebook for all of Europe is *OLSON'S COMPLETE TRAVEL GUIDE TO EUROPE, 1959-1960*, by Harvey S. Olson. This book gives many suggestions on travel preparations, things to see and do, and other helpful hints on travel in each European country, published by J. B. Lippincott Co., East Washington Square, Philadelphia, Pa. \$5.95.

For those who are planning to tour England at the time of their Congress trip there is the paper-bound pocket book, *GEOLOGY AND SCENERY IN ENGLAND AND*

## XXI INTERNATIONAL GEOLOGICAL CONGRESS

Copenhagen, Denmark

August 15-25, 1960

Sponsors

Denmark, Finland, Iceland, Norway,  
Sweden

Prior to the Congress there will be 48 field excursions to various geologic areas in the Nordic countries and following the Congress 43 excursions.

The Second Circular may be obtained by writing:

CONGRESS TRAVEL  
AMERICAN GEOLOGICAL INSTITUTE  
2101 CONSTITUTION AVE., N.W.  
WASHINGTON 25, D. C.

## Evan Just at Stanford

Evan Just, well known mining geologist, will become professor and head of the Department of Mineral Engineering at Stanford University. Just taught geology at Lehigh and New Mexico School of Mines early in his career and gained wide recognition in mining circles as editor of the *Engineering & Mining Journal*.

## Foreign Research Opportunities

Graduate students contemplating dissertations in subjects with geographical significance involving field studies abroad may obtain financial support under the program being conducted by the National Academy of Sciences-National Research Council. The Division of Earth Sciences, which is administering the program, and the Office of Naval Research, which is supplying the funds, interpret geography in its basic sense to include such fields of study as shore processes, coastal development, stratigraphy and sedimentation of unconsolidated formations, landforms and drainage, mineral economics, and many aspects of pedology, glaciology, palynology, and climatology. The final date for the acceptance of proposals is December 1, 1959 and the results of the competition will be announced no later than January 31, 1960. Information and applications can be obtained by addressing *FOREIGN FIELD RESEARCH PROGRAM, Division of Earth Sciences, 2101 Constitution Avenue, Washington 25, D. C.*

*WALES*, by Sir Arthur E. Trueman, available from Penguin Books, Inc., 3300 Clipper Road, Baltimore 11, Maryland. \$0.65.

## PENN STATE HOST TO DRILLING SYMPOSIUM

Oct. 8-10  
University Park, Pa.

Exploration Drilling will be the topic of a three-day symposium to be held at Penn State on October 8 to 10. Jointly sponsored by the Departments of Mining Engineering at the University of Minnesota, Colorado School of Mines, and The Pennsylvania State University, this will be the ninth annual Drilling Symposium held since its inception at Minnesota in 1950.

Five technical sessions will deal with statistics and operations research in exploration, bit design and rock penetration, improving core recovery, drilling and sampling of unconsolidated materials, and innovations and case studies in drilling practice. The program will be of interest to engineers, geologists, contractors, and operators.

The Exploration Drilling Symposium is one of three jointly sponsored by the three schools. Colorado was host for the Rock Mechanics Symposium in April of this year and will hold the Drilling and Blast-ing Symposium in 1960. Further information may be obtained by writing PROF. HOWARD L. HARTMAN, *Head, Department of Mining, College of Mineral Industries, Pennsylvania State University, University Park, Pa.*

### Lusk is New Mississippi State Geologist

Tracy W. Lusk has been named to succeed Dr. W. C. Morse as Director of the Mississippi Geological Survey. Lusk was assistant state geologist and had been on the staff most of the period since 1952 and has published a number of reports on ground water investigations.

Mr. Lusk was appointed by a newly organized Board which will govern the Survey. The Board consists of:

JAMES R. PRAK, *Chairman*  
RICHARD R. PRIDDY\*, *Vice-Chairman*  
W. E. JOHNSON  
S. F. THIGPEN  
HENRY N. TOLER\*

Dr. W. C. Morse retired after many years of service as State Geologist of Mississippi.

\*geologists

## PETROLEUM RESEARCH OPPORTUNITIES

The Division of Grants and Fellowships of the American Chemical Society announced that during the past eight months research in geology or closely related areas will be supported in part during 1959-60 by grants from The Petroleum Research Fund. The recipients of these grants, the amounts, and the general area of research follow.

JOHN VERHOOGEN, Department of Geology, University of California (Berkeley) \$8,700 for 14 months; *Rock Magnetism*.

JOHN C. JAMIESON, Department of Geology, University of Chicago, \$7,245 for 18 months; *Study of Carbonate Crystals*.

KENNETH L. COOK and JOSEPH W. BERG, Jr., Department of Geophysics, University of Utah, \$11,800 for 26 months; *Influence of Composition and Pressure on Velocity of Elastic Waves Through Rocks*.

JAMES W. VALENTINE, Department of Geology, University of Missouri, \$700; *Trace Elements in Calcareous Organisms*.

RUSTUM ROY, Department of Geochemistry and Geophysics, Pennsylvania State University, \$40,000 in the form of an unsolicited, unrestricted award without time limitations; *Study of Clay-like Materials*.

G. O. ARRHENIUS, Scripps Institute of Oceanography, University of California (La Jolla), \$10,000 for one year; *Formation of Authigenic Clays*.

G. W. BRINDLEY, Department of Ceramic Technology, Pennsylvania State University, \$23,160 for two years; *Properties of Clay-organic Complexes*.

CESARE EMILIANI, Physical Sciences Division, Marine Laboratory, University of Miami (Florida) \$13,950 for 14 months; *Geochemistry of Marine Sediments*.

S. C. RITTENBERG, Department of Bacteriology, University of Southern California \$12,300 for 1 year; *Sulfur Compounds in Marine Basin Sediments*.

The Petroleum Research Fund supports fundamental research and advanced scientific education in the petroleum field which may include any field of pure science which may afford a basis for subsequent research directly connected with the petroleum field. Proposals from the earth sciences are welcomed. The next deadline for receipt of requests for research to start in 1960 is December 15, 1959. For information on the preparation of proposals, write to the AMERICAN CHEMICAL SOCIETY, *The Petroleum Research Fund, 1155 16th Street, N. W., Washington 6, D. C.*

### You saw it in *GeoTimes* . . .

ECONOMIC DEVELOPMENT REVIEW: NEW MEXICO is a new newsletter being distributed to interested persons by the *New Mexico Economic Development Div., P. O. Box 706, Santa Fe, N. M.*

## COMMITTEE OF 1000 TOPS 400

Listed below are the names of 33 persons joining the Committee of 1000 for AGI-1959 since the July-August issue of *GeoTimes* went to press. This brings the total membership of this group of contributors to 421.

The contributions of the Committee of 1000 for AGI-1959 have been vital in meeting financial obligations of the Institute and have permitted the continuation of *GeoTimes* as the professional news magazine of the geo-sciences.

The problem of money with which to finance AGI's operations is not one that can be solved and disposed of without further thought—it is with us always. The precarious existence of AGI will continue as long as the need for a definite financial plan relating to realistic operating costs goes unrecognized by the Institute and its constituent societies.

### Recent Additions to the Committee of 1000 for AGI-1959\*

James S. Baker  
Norval E. Baker  
Severn P. Brown  
Richard V. Colligan  
D. R. Derry  
A. E. Fath  
Stewart H. Folk  
L. L. Fournier  
Jacob Freedman  
Harry M. Fridley  
Donald Goolsbee  
Bruce M. Hall  
Russell A. Holmberg  
William P. Irwin  
Rene F. Jooste  
R. K. Lattimore  
Clarence L. Lee

C. E. Machnich  
Asa D. McRae  
Howard A. Meyerhoff  
Ralph L. Miller  
John W. Mrock  
L. Murray Neumann  
Max B. Payne  
Guy R. Pierce  
Thomas F. Ritter  
J. Paul Schumacher  
James A. Shields  
Ned M. Smith  
Charles W. Sternberg  
Ralph E. Taylor  
Clyde Wahrhaftig  
Virgil D. Winkler

\*For previous lists of members of the Committee of 1000 for AGI-1959, see *GeoTimes* Jan.-Feb., p. 22; March, p. 17, May-June, p. 11, and July-August, p. 11.

### New Members of Committee of One Hundred

Since the Committee of One Hundred for AGI membership was last published in the January-February 1959 issue of *GeoTimes*, the following have pledged membership:

K. E. Lohman  
L. P. Teas  
W. D. Kleinpell\*

Members of the committee pledge to contribute \$100 per year to AGI. Further information may be obtained by writing the Institute.

\*Deceased

## Polish Paleontologist Honored by U.S. Academy

Professor Roman Koslowski, outstanding paleontologist from the University of Warsaw, Poland, was awarded the Mary Clarke Thompson Medal by the U. S. National Academy of Sciences for his fundamental contributions to paleontology.

On the basis of rich paleontological material collected in the Swietokrzyskie Mountains, Professor Koslowski was able to prove that the group of paleozoological invertebrates, called graptolites, belonged to the hemichordates—contrary to former opinions which had classified them elsewhere. This conclusion was of great importance to stratigraphic research and threw new light on phylogenetic studies.

Professor Koslowski is a member of the Presidium of the Polish Academy of Sciences and is Chief of Paleozoology at the Institute of the Polish Academy of Sciences.

## Geology Award to Kansas High School Student

David R. Evans, a junior at College High Laboratory School in Pittsburg, Kansas, was the recipient of the 1959 Summer Scholarship in Geology offered by the Kansas Geological Survey for the third year.

Selected on the basis of science abilities and aptitude for geological training demonstrated by research projects and reports, the recipient of the award spends 4 to 6 weeks as a salaried member of the Survey staff to work on active research projects.

Evans has received superior ratings for two years running in regional science fairs of the Kansas Junior Academy of Science. He is interested in mineralogy, is an Eagle Scout, and has served as a geology merit badge instructor.

## New Maine State Geologist

Robert G. Doyle was recently appointed state geologist to head the Maine Geological Survey, Augusta, Maine. Doyle replaces John R. Rand, who resigned to enter private consulting practice.

GEOLOGY IN THE PUBLIC EYE does not appear in this issue inasmuch as columnist Bob Bates is in the field.

This list of geological surveys of the countries of the world was prepared for the AGI Data Sheet Committee by the Foreign Geology Branch of the United States Geological Survey, Washington, D. C.

## NORTH AMERICA

**CANADA**  
Geological Survey of Canada  
Department of Mines &  
Technical Surveys  
Museum Building, Ottawa

**GREENLAND**  
Geological Survey of  
Greenland  
Østervoldgade 7, København

**MEXICO**  
Instituto de Geología  
Universidad Nacional Autónoma  
de México  
Villaobispo, México, D. F.

**UNITED STATES**  
U. S. Geological Survey  
Washington 25, D. C.

CENTRAL AMERICA AND  
CARIBBEAN ISLANDS

**BRITISH HONDURAS**  
Survey Department  
Belize

**CARIBBEAN FEDERATION**  
Mines Department  
Port of Spain, Trinidad

**COSTA RICA**  
Sección Geología, Museo  
Nacional  
Ap. 749, San José

**CUBA**  
Instituto Nacional de  
Investigaciones  
Científicas, Cerro 827,  
Havana

**DOMINICAN REPUBLIC**  
Secretaría de Estado de  
Fomento  
Dirección de Minería  
Ciudad Trujillo

**EL SALVADOR**  
Servicio Geológico Nacional  
Apartado Postal 109  
San Salvador

**GUATEMALA**  
Facultad de Ingeniería  
Universidad  
San Carlos

**HAITI**  
Geological Survey  
Department of Agriculture  
Daniels près Port-au-Prince

**JAMAICA**  
Geological Survey  
Kingston

**NICARAGUA**  
Servicio Geológico Nacional  
Ministerio de Economía  
Apartado Postal No. 1347  
Managua, D. R.

**PUERTO RICO**  
Division of Mines and  
Geology  
Industrial Laboratory  
Box 38, Roosevelt Road,  
Hato Rey

## SOUTH AMERICA

**ARGENTINA**  
Dirección Nacional de  
Minería  
Peru 562, Buenos Aires

**BOLIVIA**  
Dirección General de Minas  
y Petróleo  
Casilla 401, La Paz

**BRAZIL**  
Departamento Nacional de  
Produtos Mineral  
Avenida Pasteur 404  
Praia Vermelha, Rio de  
Janeiro

**BRITISH GUIANA**  
Geological Survey Dept.  
Brickdam, Georgetown

**CHILE**  
Instituto de Investigaciones  
Geológicas  
Augustina 785, 5° Piso  
Casilla 10,465, Santiago

**COLOMBIA**  
Servicio Geológico Nacional  
Calle 13, n. 14-79, Bogotá

**ECUADOR**  
Dirección General de Minería  
y Petróleos  
Ministerio de Economía,  
Quito

**FRENCH GUIANA**  
Service des Mines  
Cayenne

**PANAMA**  
Dirección General de Minas  
y Petróleos  
Tacuarí 271, Asunción

**PERU**  
Instituto Nacional de  
Investigaciones y Fomento  
Mineros  
División de Geología Minera  
Apartado 2559, Lima

**SURINAM**  
Geologisch Mijnbouwkundige  
Dienst  
Paramaribo

**URUGUAY**  
Instituto Geológico del  
Uruguay  
Calle J. Herrera y Obes,  
1239  
Montevideo

**VENEZUELA**  
Dirección Técnica de  
Geología  
Ministerio de Minas e  
Hidrocarburos  
Caracas

## EUROPE

**AUSTRIA**  
Geologische Bundesanstalt  
Raumofskygasse 23,  
Vienna 111/40

**BELGIUM**  
Service Géologique de  
Belgique  
13 rue Jenner, Parc Léopold  
Brussels

**BULGARIA**  
Dirección des Mines  
Ministère des Mines et des  
Richesses  
du Sous-sol, Sofia

**CZECHOSLOVAKIA**  
Ústřední Ústav Geologický  
Hradbni 9, Prague

**DENMARK**  
Danmarks Geologiske Under-  
søgelser  
Geologisk Afsnit, Institut,  
Charlottemund

**ENGLAND**  
Geological Survey and Museum  
Exhibition Road, South  
Kensington  
London S W 7

**FINLAND**  
Geologinen Tutkimuslaitos  
Ottamien

**FRANCE**  
Service de la Carte Geo-  
logique de France  
60 Boulevard St. Michel,  
Paris

**GERMANY**  
Amt für Bodenforschung  
Wiesenstrasse, Hannover

**GREECE**  
Institute for Geology and  
Subsurface Research  
Ministry of Coordination  
Bouboulinas 20, Athens

**HUNGARY**  
Magyar Allami  
Földtani Intézet  
Vörösmarty-ut 14,  
Budapest XIV

**ICELAND**  
Department of Geology and  
Geography  
Museum of Natural History  
P. O. Box 532, Reykjavik

**IRELAND**  
Geological Survey  
14 Hume Street, Dublin

**ITALY**  
Servizio Geologico d'Italia  
Largo Santa Susanna 13,  
Rome

**LUXEMBOURG**  
Service Géologique, Direction  
des Ponts et Chaussées  
38 Blvd. de la Foire,  
Luxembourg

**HOLLAND**  
Geologische Mijnbouwkundige  
Genootschap  
Gebouw Voor Mijnbouwkunde  
Mijnbouwstraat 20, Delft

**NORWAY**  
Norges Geologiske Under-  
søkelser  
Josefines gate 34, Oslo

**POLAND**  
Centralny Urząd Geologii  
Inst. Geol., ul. Jana 6,  
Warsaw

**PORTUGAL**  
Serviços Geológicos de  
Portugal  
Rua da Academia das  
Ciências 19-2°  
Lisbon

**ROMANIA**  
Comité Géologique de la  
R. P. Roumaine  
Calea Victoriei 126,  
Bucarest

**SAAR**  
Service Géologique de la  
Sarrie  
1, Trilenerstrasse, Saarbrücken

**SPAIN**  
Instituto Geología y Minería  
de España  
Rios Rosas 9, Madrid

**SWEDEN**  
Svenska Geologiska Under-  
søkingen  
Stockholm 50

**SWITZERLAND**  
Geologische Kommission der  
Schweizerische  
Naturforschende Gesellschaft  
Basel Bernoullianum

**UNION OF SOVIET SOCIALISTIC  
REPUBLICS**  
Ministry of Geology  
Moscow

**YUGOSLAVIA**  
Institut de Géologie de  
l'Académie  
Serbe des Sciences, Belgrade

## AFRICA

**ALGERIA**  
Service de la Carte Geo-  
logique de l'Algérie  
14 Boulevard Baudin  
Algers

**ANGOLA**  
Serviços de Geologia e Minas  
P. O. Box 1260, Luanda

**BECHUANALAND**  
Geological Survey, Lobatse

**BELGIAN CONGO**  
Service Géologique du  
Congo Belge et du Ruanda  
Urundi  
B. P. 466, Leopoldville

**BRITISH SOMALILAND**  
Geological Survey Dept.  
Mogadishu

**CAMEROONS**  
Direction des Mines et de  
la Géologie  
Ministère des Travaux  
Publics  
Transport et Mines, Yaounde

Additional copies of this data sheet may be obtained from  
the AMERICAN GEOLOGICAL INSTITUTE, Code 80.10.

## AGI DATA SHEET 14

AGI Data Sheet 14, The Geological Surveys of the World was prepared by the Foreign Geology Branch, U. S. Geological Survey at the request of the AGI Data Sheet Committee, R. M. Foose, Chairman.

Members of the Data Sheet Committee in addition to Dr. Foose are: John E.

Allen, William Beatty, Chester Longwell, Vincent McKelvey, George Thompson and Ian Campbell.

Ideas and suggestions for additional data sheets for this series may be submitted to Dr. R. M. Foose, Chairman, Earth Sciences Division, Stanford Research Institute, Menlo Park, California.

**EGYPT**  
Geological Survey of Egypt  
Damwin Post Office, Cairo

**ETHIOPIA and ERITREA**  
Département des Mines  
Ministère des Finances  
Addis-Abeba

**FRENCH EQUATORIAL AFRICA**  
Direction des Mines et la  
Géologie  
B. P. 12, Brazzaville

**FRENCH SOMALILAND**  
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**FRENCH WEST AFRICA**  
Director, *Fédération des  
Mines et de la Géologie,*  
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Dakar

**Ghana**  
Geological Survey Dept.  
P. O. Box 98, Saltpond

**ITALIAN SOMALILAND**  
Centro di Studi per la  
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Via del Monte di Pietra-  
lata 83  
Rome, Italy

**KENYA**  
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P. O. Box 30,009, Nairobi

**LIBERIA**  
Department of Mines and  
Geology  
Monrovia

**LIBYA**  
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Ministry of National  
Economy  
Tripoli

**MADAGASCAR**  
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Direction des Mines et de  
la Géologie  
B. P. 322, Tananarive

**MOROCCO**  
Service de la Carte  
Géologique  
Ministère de l'Economie  
Nationale  
Sous-Secrétariat d'Etat au  
Commerce et à l'Industrie  
Rabat

**MOZAMBIQUE**  
Repartição Técnica de  
Indústria  
Geologia e Minas  
Lourenço-Marquez

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Kaduna Junction

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Zomba

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Salisbury

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Office of the Inspection  
of Mines  
Government Building  
Windhoek

**SPANISH WEST AFRICA**  
Direccion General de  
Herrerias y Colonias  
Paseo de la Castellana 5  
Madrid, Spain

**SUDAN**  
Geological Survey  
P. O. Box 410  
Khartoum

**SWAZILAND**  
Geological Survey Department  
P. O. Box 9  
Mbabane

**TANGANYIKA**  
Geological Survey Department  
P. O. Box 69, Dodome

**TOGO**  
Service des Mines au Togo  
Lomé

**TUNISIA**  
Service des Mines  
de l'Industrie et de  
l'Energie  
(Service Géologique)  
Tunis

**UGANDA**  
Geological Survey Department  
P. O. Box 9, Entebbe

**UNION OF SOUTH AFRICA**  
Office of the Geological  
Survey  
P. O. Box 401, Pretoria

## MIDDLE EAST

**ADEN**  
Geological Survey  
Public Works Department  
Aden

**CYPRUS**  
Geological Survey Department  
Nicosia

**IRAN**  
Ministry of Industry & Mines  
Teheran

**IRAQ**  
Geological Survey Department  
Directorate of Mines  
Ministry of Economics,  
Baghdad

**ISRAEL**  
Geological Survey of Israel  
Hebron Road, Jerusalem

**JORDAN**  
Ministry of Economics  
Amman

**LEBANON**  
Direction Générale des  
Travaux Publics  
Beyrouth

**SAUDI ARABIA**  
Department of Mines and  
Petroleum  
Jidda

**SYRIA**  
Direction des Mines et  
Carrières  
Ministère des Travaux  
Publics  
Damas

**TURKEY**  
Madan Tetkik ve Arama  
Enstitüsü  
Posta Kutusu 16, Ankara

## ASIA

**AFGHANISTAN**  
Royal Afghan Ministry of  
Mines and Industry  
Kabul

**BORNEO**  
Geological Survey Department  
British Territories in  
Borneo  
Kuching, Sarawak

**BURMA**  
Burma Geological Department  
226 Balhousi Street  
P. O. Box 843  
Rangoon

**CEYLON**  
Department of Mineralogy  
Munipitya Lake Road  
Colombo

**INDIA**  
Geological Survey of India  
27 Chowringhee Road  
Calcutta 13

**INDONESIA**  
Central Geological Survey  
of the Republic of  
Indonesia  
Dj1. Diponegoro 57, Bandung

**JAPAN**  
Geological Survey of Japan  
135 Nisanotocho  
Kawasaki City

**MALAYA**  
Geological Survey Federation  
of Malaya  
Scrivenor Road, P. O. Box  
1015, Ipoh

**PAKISTAN**  
Geological Survey of  
Pakistan  
P. O. Box 15, Quetta

**PHILIPPINES**  
Bureau of Mines, Manila

**TAIWAN**  
Geological Survey of Taiwan  
P. O. Box 31, Taipei

**THAILAND**  
Royal Department of Mines  
Bangkok

**SOUTHERN VIETNAM**  
Service Géologique, Direction  
Générale des Mines, Ministère  
de l'Economie  
59 Rue Gia-Long, Saigon

## AUSTRALIA AND PACIFIC ISLANDS

**AUSTRALIA**  
Bureau of Mineral Resources  
Geology and Geophysics  
Ventworth House, 203 Collins  
Street  
P. O. Box 2831 AA  
Melbourne, Victoria

**NEW CALEDONIA**  
Service des Mines  
Noumea

**NEW ZEALAND**  
Geological Survey  
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Wellington

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WARN HUB for four-wheel drive Ford Model F100 and F-250 with Spicer axles has been introduced by Warn Mfg. Co., Riverton Box 6064, Seattle 88, Wash.



# Geology on Closed Circuit TV at Texas U.

By WILLIAM R. MUEHLBERGER<sup>1</sup>

An \$8,560 grant from the Minnie Stephens Piper Foundation of San Antonio will enable the Department of Geology at The University of Texas, Austin, Texas, to initiate closed circuit video-tape television instruction in the elementary physical geology course beginning in September, 1959.

Closed circuit television will allow us a nucleus of standardization for our six to seven different lecture sections each containing about 250 students. Because practically everyone in Texas knows about geology and its use, we find that a great number of the students in the University elect geology as one of their laboratory science electives. Each of these students receives three one-hour lectures a week and attends a two-hour laboratory session. In the lectures they have very little opportunity for personal contact with the teacher. The student may not grasp the principles involved the first time they are presented, but with the use of videotaped lessons, the student can see the essential items presented over and over in an abbreviated form. This nucleus of knowledge will furnish a basic standard of coverage for the various lecturers who can expand with examples from their own knowledge or continue into other topics.

The series will consist of twenty half-hour lessons which will be made during the fall semester, 1959, with the author as the principle demonstrator. By the use of the television camera, every student can have a front seat during demonstration lectures of the basic geologic processes whereas in the large lecture hall only the front rows can clearly see the demonstration that is being performed. Selected film clips will then transfer the viewer from the laboratory to nature. The subjects to be covered are those of the usual physical geology course and will por-



Everyone has a front row seat in demonstrations on TV. Above, Professor Muehlberger of the Dept. of Geology, University of Texas, discusses a deformation experiment before a TV camera in preparation for closed circuit video-tape television instruction in elementary geology in Austin.

tray the principles of weathering, mass movement, the various erosive agents, depositional agents, mountain building processes, igneous activity, metamorphism, and earthquakes. The initial lecture will be on geologic time—the only really unique item in geology. Some of the methods that have been used to measure geologic time will be demonstrated including rate of sedimentation, percentage of salt in oceans, and radioactive decay (the limitations of each method will be shown also: discontinuous deposition, recycling of salt from evaporites). We hope this will aid the student in visualizing the immense amount of time available for geological processes to complete their cycles.

The understanding of the atomic structure of minerals, how this atomic structure controls crystallographic growth, hardness, cleavage, deformation—all these can be more clearly demonstrated by means of large crystal models which can be rotated in front of the camera so that the student is looking at the crystal structure that is being described. In other words, everyone has a front row center seat.

Thus, we believe that our use of closed circuit television will be a practical solution to the problem of demonstration lectures for large classes. We hope that the quality of these films is such that they will be useful to other colleges or universities in Texas to whom, under the terms of the grant from the Piper Foundation, these films will be available.

<sup>1</sup>WILLIAM R. MUEHLBERGER, Department of Geology, University of Texas.



### **Dr. Abbott Receives Grant to Continue Coal Research**

Many a geologically-trained wife of a professional geologist will be envious of Dr. Maxine Langford Abbott, who recently was awarded an NSF grant of \$20,900 to continue her paleobotanical research on the tree ferns of the Upper Freeport coal in Ohio. Dr. Abbott is the wife of Ralph Abbott, a geological engineer in charge of the soil laboratory at Bunker Hill Air Force Base, Peru, Indiana.

Mrs. Abbott, a research associate in paleobotany at the University of Cincinnati, has been serving as curator of the J. H. Hoskins memorial paleobotanical collections on a volunteer basis, without compensation. In her five years of collecting and studying the fragile ferns, she has developed her own techniques for preparing the ferns for study. She makes her own slides and does her own drawings.

Dr. Abbott is the mother of two children. In addition to the typical duties of a mother of teen-agers, she has conducted her paleobotany research and worked in a Cincinnati department store office three days a week to finance her research costs.

### **Charles Deiss Dies**

Dr. Charles F. Deiss, State Geologist of Indiana and Chairman of the Indiana University Department of Geology died on June 13 after an extended illness. Dr. Deiss was active in many professional society affairs. He conducted field research in the northern Rocky Mountain area for a number of years in addition to his heavy administrative and teaching responsibilities.

## **PETROLEUM CONGRESS PAPERS AVAILABLE**

The Fifth World Petroleum Congress, which met May 30-June 5, in New York City, featured the presentation of 57 papers on Geology and Geophysics by workers from 22 countries. The subjects covered include such diverse topics as dolomitization studies in France, regional geology of the Middle East, progress in geophysical technique in the U.S.S.R., geochemical age determination of sedimentary rocks, and detailed studies of oil fields throughout the world. A preliminary list of the papers presented was published in the January 23, 1959, issue of *Petroleum Week* (pp. 22-23). The papers were made available, to members attending the Congress, in the form of preprints which were distributed before the meetings. Preprints of individual papers are still available in limited number and can be bought for 25 cents per copy.

The Proceedings of the Congress will be published this fall in 11 bound volumes, each volume relating to a different aspect of petroleum technology. The papers on geology and geophysics will constitute Section 1 of this series and the volume will sell for \$12.50 per copy plus 50 cents mailing expense.

Please address all inquiries and orders to: *Fifth World Petroleum Congress, Inc., 527 Madison Avenue, New York 22, New York.*

### **Rodgers Studies at College de France**

John Rodgers, Associate Professor of Geology at Yale University, has been awarded a National Science Foundation Senior Post-doctoral Fellowship and will take a year's leave of absence in Europe. He will study the structural geology of the Alpine ranges with Prof. Paul Fallot at the College de France in Paris and in the field in the Alps. His address, from June 1959 to August 1960 inclusive, will be:

*Laboratoire de Geologie  
College de France  
Place Marcellin-Berthelot  
Paris 5e, France*

During the academic year 1959-1960, Professor S. Warren Carey of the University of Tasmania will be Visiting Professor of Geology at Yale University. In September 1960 Prof. Rodgers will return to the Department of Geology at Yale.

## The Abuse of Italic<sup>1</sup>

At least two geology textbooks published in the last five years pay no attention to the proper use of italic type. Both of these are by authors and publishers who should know better. Unless some protest is made I fear that this careless procedure may become more widespread and italic type will lose the significance it has had for many years.

In *Principles of Historical Geology* by Stovall and Brown (Ginn, 1954) italic type is used for paragraph headings, plate and figure legends, stratigraphic names, and phrases needing emphasis. However, in those plate legends where generic and specific names of animals and plants are used these names are in Roman type. This is a bold defiance of the International Rules of Zoological Nomenclature.

In *Time, Life, and Man* by Stirton (Wiley, 1959) italic type is used for almost anything that the author, (or editor?) chose to use it for. Here we find the following things in italic type, at least part of the time: names of zoogeographic regions, adjectives, newly introduced words, names of ships, titles of books, some author's names (not all, however), foreign words and phrases, physiographic features, and, in the body of the text, generic and specific names. For part of these italic type is proper, for others it is not. However, in the plate and figure legends generic and specific names are not italicized, another defiance of the Rules.

With all the variety of type available to printers, and the many ways of expressing emphasis by grammatic construction, it seems we should not tolerate this abuse of italic type which has for so long had limited special significance. The new *Suggestion to Authors* of the U. S. Geological Survey states very clearly the desired uses for italic type and it would be well to abide by it.

<sup>1</sup> A. G. Unklesbay, University of Missouri.

## You saw it in *GeoTimes* . . .

GEOKIT is a compact, pocket size leather kit fitted with the following items: alnico magnet, microknife, streak plate, blow-pipe, tweezers, dental pick, 10x hand lens, platinum wire, acid bottle, map measurer, ball point pen and note pad. For further details write: *GeoScience Instruments Corp.*, 425 Park Ave., New York, N. Y.

## NOLAN APPOINTED TO MATERIALS COMMITTEE

Thomas B. Nolan, Director of the U. S. Geological Survey was appointed recently by Dr. Detlev W. Bronk, President of the National Academy of Sciences-National Research Council to a newly organized 14-man *Committee on the Scope and Conduct of Materials Research*. Dr. Clyde Williams, former head of the Battelle Institute is chairman of the Committee composed of prominent leaders in science from colleges, industry and government.

The purpose of the Committee will be to view the total materials research needs of the country with relation to general public welfare. The Committee has been asked to determine how more rapid and effective progress in materials research can be realized through increased financial support, administrative or organizational steps, improved coordination of effort or other means; to consider both basic and applied research carried on for both defense and non-defense purposes in governmental, industrial, academic and other research institutions; and to consider the resources of raw materials, personnel and facilities.

## Photogrammetry Award Open to Geology Students

Students in geology are eligible for participation to compete for the Bausch and Lomb Photogrammetric Award made each year by the American Society of Photogrammetry for the best paper on photogrammetry by a college student.

The winner of the first prize receives \$100 and a three year paid-up membership in the ASP. There are two second prizes of \$50 and a one year paid-up membership in the Society.

The purpose of the award is to stimulate interest in photogrammetry among college students and to recognize meritorious achievement of students in the field.

The papers must be 4000 words or less and are due by January 31, 1960. Additional information may be received by writing CAPTAIN O. S. READING, *Chairman of the Bausch & Lomb Photogrammetric Award Committee*, American Society of Photogrammetry, Brookhaven National Laboratory, Upton L. I., N. Y.

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ORGANIC GEOCHEMISTRY  
SECTION**

A group of organic and petroleum geochemists plan to organize an Organic Geochemistry Section within The Geochemical Society. The purpose of this section is to offer a common forum for research workers who are active in the various fields of organic and petroleum geochemistry. Recent advances in these fields indicate the desirability of the exchange of ideas and of their coordination with modern concepts of inorganic geochemistry and geology. The interest shown by earth scientists in The General Petroleum Symposium, which was held recently at Fordham University, supports this view.

Plans are being made to organize the Organic Geochemistry Section at the 1959 annual meetings of the Geological Society of America and The Geochemical Society in Pittsburgh, Pennsylvania, November 2-4. Information regarding this section may be obtained from the members of the Interim Executive Committee, who are listed below.

EDWARD G. BAKER, *Esso Research and Engineering Co., P.O. Box 51, Linden, New Jersey*

EARL INGERSON, *Dept of Geology, The University of Texas, Austin 12, Texas*

BARTHOLOMEW NAGY, *Chairman, Dept. of Chemistry, Fordham University, New York 58, New York*

PAUL A. WITHERSPOON, *Dept. of Petroleum Engineering, University of California, Berkeley 4, California.*

The members of this committee invite suggestions and comments regarding this matter. It would be helpful if interested individuals could, in advance of the annual meeting, signify their intention to affiliate with the section, whether or not they plan to attend the meeting.

The only requirements for affiliation with the section are membership in the Geochemical Society and an interest in organic chemistry. Membership in the society is open to individuals who have a bachelor's degree or its equivalent in a natural science and an interest in applying that science to geologic problems. Dues are \$2.00 per year. Application blanks can be obtained from the *Secretary, Professor Konrad B. Krauskopf, Dept. of Geology, Stanford University, California.*

## Popular Geology in Print

by Mark W. Pangborn, Jr.

A popular book on geochemistry has been one of our great needs for many years, and now the Russians have obligingly filled the gap with a charming work—in English—A. E. Fersman's *GEOCHEMISTRY FOR EVERYONE* (Foreign Languages Publishing House, 1958, \$2.50, distributed by Telberg Book Co., 544 Fifth Avenue, New York 11, N. Y.). With obvious disregard for conciseness the author ambles through Mendeleyev's periodic table, explores the geochemical cycle, looks at the future of geochemistry, and examines, at length, the occurrence and uses of the elements; although aimed at the high school student and layman, this volume, with its innumerable fresh illustrations and abundant references to the history of geology, will delight the professional scientist. We hope that Fersman's book will inspire some American geologist to turn out a popular geochemistry, more concise, with emphasis on principles, and stressing the geochemical cycle and the deposition of ores.

Mining history fans will welcome the reissue of *Eliot Lord's* classic *COMSTOCK MINING AND MINERS* (Howell-North Books, 1050 Parker St., Berkeley 10, Calif., 1959, \$8.50); originally published in 1883 as U.S.G.S. Monograph 4, this reprint includes 105 well-chosen plates not in the original. For the same audience is *THE LIFE AND DEATH OF A QUICKSILVER MINE*, by *Helen Rocca Goss* (Historical Society of Southern California, 1909 South Western Ave., Los Angeles 18, Calif., 1958, \$5), a history of the Great Western Quicksilver Mine of southern Lake County, California, between 1876 and 1900.

The vast and puzzling world of the sea-bottom is the subject of *Francis P. Shepard's* fine *THE EARTH BENEATH THE SEA* (Johns Hopkins Press, 1959, \$5). A popularizing and updating of his *SUBMARINE GEOLOGY*, 1948, this meaty volume will excite both the serious high school student and the geologist; subjects covered include waves, currents, and beaches, continental shelves and their canyons, the ocean floor and coral reefs; the author relates some of his personal experiences, and there is a brief bibli-

## Exploration Geophysicists Make Twenty-eight Scholarship Awards

Howard L. Cobb, Chairman of the Society of Exploration Geophysicists Foundation, announced recently that 28 scholarships for studies in geophysics have been awarded for the academic year 1959-60. The awards by the SEG Foundation are made from a trust fund supported by companies and individuals interested in geophysical education. Thirty-eight contributors are supporting the 1959-60 program.

Willard J. Hannon, a recipient of an SEG scholarship in geophysics in 1958-59, recently was graduated *summa cum laude* from St. Louis University. He will continue work toward a master's degree in geophysics at that institution, aided by an NSF graduate fellowship.

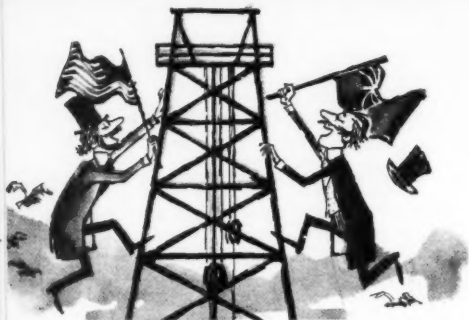
## You saw it in *GeoTimes* . . .

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ography. A more abundant use of well-labeled block diagrams would surely have been of great help to the lay reader.

*Polly Longworth's* *EXPLORING CAVES* (Crowell, 1959, \$2.75) is a most accurate and informative account, for the teenager, of spelunking techniques and history, cave geology, and cave life; a glossary, list of commercial caves, and short bibliography complete a very good book.

*CAVES AND CAVE DIVING* (Crown, 1958, \$3) is *Guy de Lavar's* interesting account of his explorations in some challenging French caves, coupled with comments on techniques and equipment, and a bibliography. Less satisfactory is *Anton Lübke's* *THE WORLD OF CAVES* (Coward-McCann, 1958, \$5), a rambling compilation of fact and fancy concerning such subjects as cave man, cave "geology," salt mines, and ice caves.



**Was Colonel Drake  
really firstest  
with the mostest?**

Well, it seems we've been scooped... us Yankees, that is. All year, now, we've been celebrating 1959 as the 100th anniversary of our industry. And we just naturally took it for granted that it was Colonel Drake who brought in the world's first commercial oil well at Titusville, Pennsylvania, on August 27, 1859.

A Canadian friend to the North, Calstan's Ian Morrison, citing Canada's *Daily Oil Bulletin*, respectfully begs to disagree.

Colonel Drake, says the *Bulletin*, was a good man and true but he was not the real daddy of the North American oil industry. That honor, it submits, belongs to a keen-eyed, side-whiskered Ontario gentleman by the name of James Miller Williams.

Pioneer Williams made his strike with a 65-foot hole in a little gum bed in Lambton County in Southern Ontario. The exact date is a bit hazy; some Canadian historians say early 1857, all agree it couldn't have been later than '58. Production? Records say from 5 to 100 barrels a day were taken.

On the strength of this well and the ones that followed soon after, Williams built Canada's first oil refinery nearby, thereby becoming the first to manufacture and sell oil products on an organized basis. His first equipment was a retort in which the oil was distilled, producing a comparatively light, iridescent liquid which was sold as lamp oil. Many others before Williams "processed" the oil only to the extent of boiling it in iron pots and using the thick residue as asphalt—everything else was thrown away.

By the end of 1859, Williams is said to have drilled (they called it "bored" in those days) some 27 wells. And by July

**WHO GETS  
TOP  
BILLING<sup>1</sup>  
?**

of 1860, he was advertising crude oil for sale in 100,000 gallon lots, presumably based on his five operating wells yielding a total of 600 to 800 barrels a day.

What, then, of the good Colonel Drake and our grand Yankee Centennial? Well, our position is perhaps best stated by Max Ball in his book, *This Fascinating Oil Business*:

"Drake's 69-footer," Ball writes, "was not the first producer. Oil had been produced for thousands of years from hand-dug wells. And it was not the first drilled well to produce oil, for many wells, drilled to produce salt, produced oil—both in the U.S. and Canada. It was not even the first well drilled for the specific purpose of obtaining oil. China probably was doing that before the time of Christ.

"What was unique (about Drake's venture) was that it was the first well drilled specifically for oil, in a prolifically oil-bearing region, at a time when the lamps and machinery of a rapidly industrializing world were in need of a cheap source of illuminants, fuels and lubricants."

So there.

<sup>1</sup> Reprinted from the *Standard Oilier*, May 1959 Vol. 21, No. 5.

**Earth Science Division  
Established at Ontario  
Museum**

The Royal Ontario Museum has recently announced that the name of the Division of Geology and Mineralogy has been changed to the Earth Sciences Division. Associated with the Museum are V. M. Meen, Division Head and Curator of Mineralogy, and W. M. Tovell, Curator of Geology.



## IMLAY HONORED BY MONTANA STATE

Ralph W. Imlay of the U. S. Geological Survey was awarded a Doctor of Science degree at the June commencement ceremonies at Montana State University.

The following paragraph contained in the citation read, "He is internationally recognized as the leading authority on the Jurassic and Lower Cretaceous history of North America. His research output has been outstanding both in quantity and quality with scores of titles in his bibliography. His major works have dealt with the stratigraphy and paleontology of Mesozoic rocks in the Gulf of Mexico, Alaska, and western interior of United States regions, including Montana. These works have been particularly valuable in the search for oil in North America. His area of research and responsibility is concerned with a significant segment of the country's economy and income as Mesozoic rocks produce nearly 20 per cent of our country's oil and gas, annually totalling nearly 8 billion dollars in value."

## Top Award Goes to Helen R. Belyea

Dr. Helen R. Belyea, staff geologist of the Geological Survey of Canada, was honored at the annual meeting of the Canadian Institute of Mining and Metallurgy when she received the Barlow Memorial Award for 1958 for the best paper on economic geology published by the CIM. Dr. Belyea, a specialist on Devonian subsurface stratigraphy, was given the award for her paper "Distribution and Lithology of Organic Carbonate Unit of Upper Devonian Fairholme Group, Alberta."

## Brady Prize in Geology Established at Union

Edward S. C. Smith, Chairman of the Geology Department, Union College, Schenectady, New York, has announced the establishment of the Robert M. Brady Prize in Geology to be awarded annually to the senior major having the highest scholastic standing who plans to attend a graduate school. The prize has been made possible by Robert T. Brady, Union 1947, Robert M. Brady's grandson.

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tional Geological Congress

# LETTERS



DEAR EDITOR:

I would like to share with you some thoughts respecting the status of geology as a science.

All of us have often been asked if geology is a basic or an exact science. My attempts to answer these questions force me to respond that geology is *not* a basic study but *is an exact science*, and that it embraces an order of mental discipline which is unique among the sciences.

Two sciences I would classify as basic; these are, mathematics and physics. Chemistry is purposely omitted from the basic sciences because it is considered as an area of study embracing the physics of the energy exchanges of chemical reactions. For similar reasons, geology and the biologic sciences are separately classed.

The natural laws and energy exchanges with which we treat are very exacting. The student is constantly face-to-face with these exacting natural laws, no matter what the area of his geologic interest.

Our position among the sciences is unique because Earth is in constant transformation. The unique character of our problem can be emphasized by comparison to chemistry. In the chemical laboratory, the degrees of freedom, or variables that enter into any experiment, seldom exceed two or three. This exactitude of control does not exist in Earth's retort. To emphasize this, visualize a magma rising toward Earth's surface. Consider the extreme variations which occur in each of the potential variables of pressure, temperature, water content (primary, connate, absorbed, and meteoric), and chemical elements constantly being added or subtracted by assimilation, replacement, or crystallization, etc. To this, add the ever-important element of time.

I take the stand that geology is an exact science, and that our apparent inexactness stems from the fact that, as yet, we do not have the research methods to treat simultaneously the multiplicity of variables that nature, through time, inserts into the system being studied. We are constantly reminded, often sharply, of the limitations of our vision; but until we can measure these variables simultaneously, our science will, in a large measure, remain interpretive.

LEO A. THOMAS  
Iowa State College

*Selected from comments of persons who have recently contributed to support of AGI & GeoTimes . . .*

"Your publication has improved greatly over the years. I'd guard against its becoming too big."

"Don't waste my time on academic humor. I enjoy news of the profession, book reviews and job wanted columns. Why is everyone wanting to teach. I need a paleontologist to work."

"How about a series of articles reviewing overseas earth science organizations, their staff, scope of activities and post-1955 publications."

"It is only my opinion: There is too much chatter of no interest and a waste of time to read. There are many good articles that are worthwhile. Sandstone Sam should be given more space."

"More on the draft. More on registration of geologists and what the 'evil' civil engineering people are doing about registration of jobs that concern geologists."

"AGI and GeoTimes serve real needs so effectively that it makes one wonder how the profession ever got along without them."

"Keep up the good work. Although I am temporarily 'disconnected' from the profession for naval service, I enjoy your magazine immensely and find it very informative."

"I would like to see a continuation of the 'light touch' which makes GeoTimes refreshing to read."

"As a member of the \_\_\_\_\_ and other technical societies, I believe AGI and GeoTimes is superfluous in that it covers identically the materials of the other organizations." (This was received unsigned and obviously without an accompanying contribution.)

"In spite of original doubts I find myself reading GeoTimes from cover to cover."

TO THE EDITOR:

Your May-June issue of *GeoTimes* contained a very pertinent article by Mr. Graham R. Curtis. Mr. Curtis expresses exceedingly well, the feelings of many of

us in the geological profession. Every day, young, hopeful geologists come by my company looking for jobs that are non-existent and yet practically every professional organization is encouraging more and more students to major in geology. Just in the last five years, many new geological departments have been opened in small schools all over the country, whose students will probably not be able to find jobs. The demand for geologists in the petroleum industry, which hires three fourths of all geologists, probably reached a peak two years ago and will decline in the years to come. The great need is to develop a demand for geologists in other industries.

Mr. Curtis' remarks on the passive role of our profession is very timely. Your excellent article on depletion is a step in the right direction.

Your very truly,  
A COMPANY GEOLOGIST

DEAR EDITOR:

I am a geology major at the University of — and am consequently an avid reader of the "GeoTimes." In the past I have read the issues in the science library, but would like a subscription of my own. GeoTimes has prompted me to set my sights somewhat higher than a BS degree and has aroused my interest in fields within the earth science family of which I was less familiar. Unfortunately, my current financial situation finds me unable to contribute to the AGI's program, but nevertheless, I am well aware of the needs and will lend my support at some future date.

A GEOLOGY MAJOR

DEAR EDITOR:

There can be no quarrel with F. N. Earll's demand for freedom of access to the Hapgood-Campbell concept. In such matters everyone's window is his own.

CHESTER R. LONGWELL

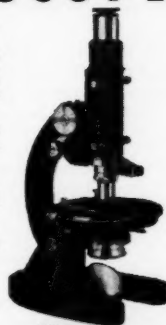
### NATO Fellowship

Gordon C. Grender, of Pennsylvania State University, has been awarded a NATO post-doctoral fellowship under a program administered by the National Science Foundation for the Department of State. He will continue his studies during the coming year at the University of Oslo, Norway. Dr. Grender received one of the 13 awards made for study and research in the physical sciences. He is a member of the AAPG.

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**RADIOACTIVITY MEASURING INSTRUMENTS**, by M. C. Nokes, 75 pp., 1958, *Philosophical Library, Inc.*, 15 E. 40th St., N. Y. 16, N. Y. \$6.00.

The author, associated with the Harwell laboratories, discusses in a rather non-technical approach the various types of radio activity measuring instruments.

**HISTORICAL GEOLOGY LABORATORY MANUAL FOR THE SOUTHERN STATES**, by James F. L. Connell, 143 pp., 1959, Wm. C. Brown Company, Dubuque, Iowa, \$2.50.

A laboratory manual developed around Southern geology for use in colleges of the South. Unit 1—Study of fossils, Unit 2—Geologic maps, Unit 3—Exercises on the surface geology of the Southern states.

**THE GEOLOGISTS ASSOCIATION, 1858-1958**, edited by G. S. Sweeting, 165 pp., 1958, Benham & Co., Ltd., 12 Culver St., Colchester, England, 25 shillings (\$3.50 U.S.).

This history was published during the centennial year of the founding of the Geologists' Association. The membership of the Association is a blending of professionals and amateurs with an interest in geology. This historical count is an important contribution to the understanding of geology and geologists during the past one hundred years.

Professional geologists in North America could do well to ponder the statement found on p. 133 "... the amateur has always been, and continues to be, the mainstay of our Association." Some think the profession should be aloof and disinterested in popular pursuit of geology.

**MAMMALS OF NORTH AMERICA, 2 Vols.**, by E. Raymond Hall and Keith R. Nelson, 1083 pp. plus indexes to vernacular names and technical names, 1958, Ronald Press, 15 East 26th St., New York 10, N. Y. \$35.00 for 2 vols.

This work is to the study of mammals what Dana is to mineralogy. The geologist-geophysicist who has field contacts with the flora and fauna of the continent will appreciate these volumes on the mammals of North America. One of the most valuable aspects of the volumes is the series of 500 maps showing the geographic distribution of mammals. There are 538 drawings of skulls and 186 pen and ink

drawings of typical mammals. The arrangement is by evolutionary sequence. This is a milestone in zoological literature.

**A SYMPOSIUM OF OIL AND GAS FIELDS OF SOUTHEASTERN NEW MEXICO**, edited by T. F. Stipp and others, 375 pp., 1956, and published by the Roswell Geological Society, P. O. 6732, Roswell, New Mexico. \$15.00.

A symposium volume reviewing all New Mexico oil and gas developments. Very well illustrated with structure sections, correlation charts, columnar sections, geologic maps, etc.

**WATER WITCHING**, by Ollie Smith, Jr., 4 pp., 1959, I. C. No. 1, Tenn. Dept. of Conservation, Division of Water Resources, Knoxville, Tenn.

**THE EVOLUTION OF NORTH AMERICA**, by Philip B. King, 96 figs., 190 pp., 1959, Princeton University Press, Princeton, N. J. \$7.50.

Students starting training for a career as a geologist will find within this book a descriptive framework of North American geology. Professional geologists will use this book as a refresher and as stimulus to bring new perspective into his own geologic thinking. Amply illustrated and written in an easy style, this book will be read by many for the pleasant, but informative, relaxation it offers.

**RESEARCHES IN GEOCHEMISTRY** edited by Philip H. Abelson, 511 pp., 1959, John Wiley & Sons, Inc., 440 Fourth Ave., N. Y. 16, N. Y. \$11.00.

Twenty-five outstanding research workers in the field of geochemistry present data on the present status of geochemical research as it relates to many facets of geology such as geochronology, geochemical prospecting, carbonate rocks, etc. The assemblage of papers was given at a seminar series at the Department of Geology, The Johns Hopkins University, and the Geophysical Laboratory of the Carnegie Institution of Washington in 1957-58. This book has material of value to all geoscientists who are trying to keep abreast of research developments in the field. The editorial style is commendable.

**AN INTRODUCTION TO GEOLOGY, Text of 8 radio talks on the CBC** by David M. Baird, 111 pp., 1959, CBC Publications Branch, Box 500, Toronto, Ontario. \$.75.

Dr. Baird presented 8 nationwide broadcasts over the Canadian Broadcasting Company's network. These interesting talks are brought together in this booklet.

**BIBLIOGRAPHY OF THESES IN GEOLOGY**  
(through 1957) by John & Halka Chronic  
and others, 1958, Pruett Press, Boulder,  
Colo. \$15.00.

This reference book is one which is certain to be of great interest and inestimable value to the profession. It lists 1191 Masters and Ph.D. theses in geology from colleges and universities in the U. S. and Canada, giving the author, degree and year of degree, institution, and title of thesis. There are lists of the schools, an index of geologic formations, and a fairly comprehensive general subject index. The usefulness of the bibliography could have been greatly increased if annotations on abstracts were provided but, of course, this would be a costly addition. A key to those theses available on microfilm would also have been helpful. The compilers are to be commended for their service to the profession in completing this important task.

**GEOLOGICAL STRUCTURES AND MAPS, 2nd Edition**, by A. Roberts, 92 pp., 99 figs., 1958. Clever-Hume Press, 31 Wright's Lane, Kensington, London, W. 8, 12s. 6d.

This is a graded course of exercises in geological map interpretation prepared particularly for training civil and mining engineers. Various geologic situations which might be encountered in mining and in civil engineering work are outlined and illustrated in the text portion of the work book and appropriate classroom exercises are included. General geology teachers may want to add this to their library of laboratory manuals.

**ECONOMICS FOR THE MINERAL ENGINEER**, by Edmund J. Pryor, 254 pp., 1958, Pergamon Press, Inc., 1408 New York Ave., N.W., Washington, D. C. \$6.00.

A guide book to the economics of mineral development which discusses all facets of the problems of exploration, development, milling, marketing, management, and company organization. Also includes a 28-page glossary. The author is on the faculty of the Royal School of Mines, Imperial College of Science and Technology, London.

**THE CHEMISTRY AND PHYSICS OF CLAYS AND OTHER CERAMIC MATERIALS**, by Alfred B. Searle and R. W. Grimshaw, 942 pp., 1959, Interscience Publishers, Inc., New York, \$16.25.

The first half of this book is devoted to the mineralogy, petrography, and crystal chemistry of ceramic materials and con-



## ROCK CHIPS

by SANDSTONE SAM

*Clarification—the process of filling in the background with so much detail that the foreground goes underground.*

*Student definition of sinter—"Sinter—ash produced by volcano sinter cones—small cones which are built up of sinter (ash)."*

*Modern research work—an exhaustive search for the guy who moved the files.*

*A geologist is a screw ball  
Who gathers up some rocks,  
Then labels them quite neatly  
And puts them in a box.  
He leaves them lying 'round the place  
Forever and a day,  
Then stacks 'em all out in the hall  
With a sign, "Please throw away!"  
Caretaker\**

\* This poem was left in the place of a large pile of discarded rocks by the janitor in a large building (very large building) that served as office space for a horde of rock hounds.

## GARRELS LECTURES TO SCIENCE TEACHERS

Over 100 high school science teachers attending a summer institute on teaching of chemistry, physics and mathematics at St. Louis University this past summer heard Professor Robert M. Garrels, of Harvard University, lecture on "The Role of High Temperature Water Chemistry in the Explanation of Earth Processes."

Dr. Garrels was one of four special lecturers to talk to the teachers. His talk highlighted some of the challenges which the mineralogy of vein deposits present to research workers in the area of the high temperature-high pressure aqueous systems.

tains material which is normally available to the geologist in various other sources.

The second half, however, deals with physical and chemical changes taking place in the kiln, and the results of these changes. This information is not so easily available.

The book is an excellent reference for the geologist and text for the non-ceramist.

R.C.B.

#### **CBC GEOLOGY** (Continued from page 18)

versity, to the ranks of assistant, associate, and full professor at Mount Allison University (in Sackville, New Brunswick), at the University of New Brunswick, and at the Memorial University of Newfoundland, where he headed the department of Geology and was also a member of the University Senate. He also served for six years as Provincial Geologist for Newfoundland. In the autumn of 1958 he accepted the position of Professor and Head of the Department of Geology at the University of Ottawa. He is married, with three children. Among other offices held have been the following: Chairman, Newfoundland Branch, Canadian Institute of Mining and Metallurgy; Councillor, Canadian Institute of Mining and Metallurgy; Councillor, Geological Association of Canada; and Member, National Advisory Committee on Research in the Geological Sciences. He is the author of numerous articles and geological maps, most of which deal with his studies in Newfoundland.

#### **NEW MEXICO FIELD TRIP**

The New Mexico Geological Society will sponsor their tenth annual field conference in west central New Mexico, October 15-17. The field trip participants will study sediments of Pennsylvanian through Tertiary age in an area where there is currently no oil and gas production. Interested persons should write R. E. Ostrander, 245A Korber Building, Albuquerque, New Mexico.

#### **FULBRIGHT AND SMITH-MUNDT OPPORTUNITIES**

Opportunities for visiting professors and research workers in the geosciences are available for 1960-1961 under provisions of the Fulbright Act and the Smith-Mundt Act. Following are the countries where opportunities for Fulbright teaching or research awards in geology, geophysics and geography will be open in 1960-61; closing date for applications is October 1, 1959:

**AUSTRIA:** Geology, Mineralogy, Paleontology, Geophysics, Geography

**BELGIUM:** Geology, Geography of Belgian Congo

**DENMARK:** Geophysics, Geography

**FINLAND:** Geology

**FRANCE:** Geography

**ICELAND:** Geology, Geothermy, Ocean Geology, Geography

**ITALY:** Geography

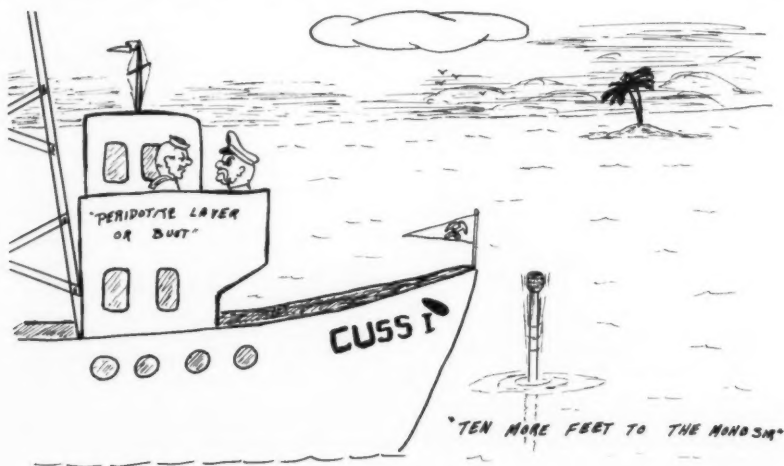
**JAPAN:** Paleontology, Geography

**NETHERLANDS:** Geology, Paleontology

**NORWAY:** Geology, Mineralogy, Petrology, Geochemistry

**UNITED KINGDOM:** Sedimentology

For details about these programs and application forms write: *Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Avenue, N.W., Washington 25, D. C.*







#### FILMS OF INTEREST

**OUR MR. SUN.** 16 mm. Sound. Color. 60 minutes. 1956. Despite some flamboyant Hollywood touches and puerile animation (believed necessary, no doubt, for non-scientific audience appeal), this Bell Telephone System Science film discusses our sun, listing many of its characteristics and describing its all-important position as life-giver to the earth. The picture was first telecast nationally in November 1956, repeated in December 1957, and is now available for free loan to educational institutions.

It is beautifully filmed, with Frank Capra directing. Some corona shots, perhaps the best ever taken, are particularly noteworthy, and show many spectacular gyrations of that mysterious gaseous cloud. The picture particularly emphasizes the importance of the sun to life and energy interchange on the earth, and also reviews man's unceasing and unquenchable desire to learn more about the world around him. Recommended for all whose interests embrace our earth's history and development through time.

**DISTRIBUTORS:** *Bell Telephone Companies throughout the U. S. and Canada. Contact the nearest representative.*

**UNCHAINED GODDESS.** 16 mm. Sound. Color. 58 minutes. 1958. This new addition to the Bell Telephone System Science Series features all-too-common non-scientific animation and oversimplification of some not-so-simple phenomena, but none the less is a superbly filmed and delightfully presented story of our weather, what makes it and why.

Among the subjects discussed are the Coriolis effect, cloud types, world wind belts and air circulation, the jet stream, isobar charts, storms and the work of tracking and predicting them, short and long range weather forecasting, and sun spot cycles. Some spectacular tornado shots give vivid views of this violent type of storm. Toward the end a number of unanswered questions comprising frontiers of research not yet crossed, are discussed, and shown to be characteristic of any science study. Recommended for all who

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The Second Annual Meeting of the California Association of Engineering Geologists will be held on the campus of the University of Southern California, October 9-11. The program for the meeting is as follows:

#### OCTOBER 9

*Morning*—Registration

*Afternoon*—Technical Papers on Engineering Geology

*Evening*—Annual Banquet and Presentation of new officers

#### OCTOBER 10

*Morning*—Business Meeting

*Afternoon*—Symposium (invited papers) on "Engineering Geology in the Nuclear Age"

#### OCTOBER 11

Field Trips (2) to Southern California areas

The C.A.E.G. was formed in 1958 with the following objectives:

- Provide for discussion of subjects and problems coming within the field of interest of the Engineering Geology profession.
- Establish and maintain high ethical and professional standards.
- Promote the public safety and welfare.
- Further public understanding and acceptance of the responsibilities of engineering geologists, and otherwise to promote the welfare of the profession.
- Anticipate legal or other developments that would affect professional activity, provide information on their potential effect, and provide an organization for concerted action.

Persons desiring more information on the California Association of Engineering Geologists and its October meeting may write **BRUCE M. HALL, Chairman, Public Information and Professional Relations Committee, C.A.E.G., P.O. Box 4164, Sacramento 21, Calif.**

are interested in weather and in the blanket of air surrounding our earth.

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## UNEMPLOYMENT *(Cont. from page 11)*

it clearly appears to be to their own best interests to do so. A well-trained geologist is by far the cheapest form of exploration. The few dollars industry may save in its firings, it loses many times over when it comes to remanning with the lower average grade of personnel that is obtainable during periods of abnormally high competition. Meanwhile, there has been a very large amount of lost motion and understanding that has to be made up and paid for when there isn't the time necessary for it. The cost is not one that can be figured in terms of salary dollars.

Though our immediate concern is with current unemployment, unemployment is only a symptom of an illness, the correction of which, from our own standpoint, is a long range matter, to which we may now turn.

### EDUCATIONAL INADEQUACIES

Much of our trouble with unemployment and, indeed, our status as a profession, goes to the roots of our education system. In most schools the training is inadequate, both in depth and breadth, for a knowledgeable career in geology. It is particularly inadequate in the other sciences that are basic to real geologic understanding. In many schools good fundamental training is ridiculously inadequate. Too long we have been content with mediocrity. We all know that many take geology because of inadequate capacity to handle chemistry, physics, physical chemistry, mathematics, dynamics, etc. Yet these disciplines are basic to a really sound understanding of geology, of geologic processes of every kind, and of geologic environments, an understanding of which is fundamental to every conceivable process in earth science. I venture to say that well over 90% of petroleum geologists have not had enough physics, chemistry, physical chemistry, etc. to fully appreciate the truth of these statements.

Much of the wide disagreement among geologists on the commonest, most fundamental of problems is due to our ignorance of basic factors and to our inadequate capacity for understanding, to say nothing of creative thinking. The extent to which we find ourselves clinging to archaic, completely unsound ideas because of lack of depth and breadth in our training is pitiful. It is a sad commentary on the state of our knowledge.

As a natural result of lack of insight, geologists do not have requisite roots and pride in their profession. Far too many young men, and even older ones, look upon geology, not as a dedicated career but as

a means of getting a pleasant, easy living.

Except for such native ingenuity as he may be blessed with, the average geologist is equipped today with inadequate competitive advantages outside of his own too narrow and shallow field of training. Many subconsciously realize this, and they take the first opportunity to get out of geology into management or operations. This in itself is not wrong. Too commonly they do this, however, because they haven't enough firm roots in their profession to know it, to be usefully wedded to it, and to have proper pride in it. When such men get into management they too often become a real bottleneck to the implementation of sound geology. The answer is not necessarily in quantity of education, but in quality combined with objectivity.

A large percentage of petroleum geologists early show more interest in the physical operations in the oil industry than in their science and in the objectives for which they were trained. Aside from lack of firm roots in their science, this results also, in part, from the fact that companies tend to encourage this straying away from the profession by holding out much greater rewards in management or in operations than for striving toward sounder geologic thinking. This is discouraging to geologic endeavor. The result, as is so often seen, is uninformed management of unsound technical advice. This leads to further discouragement of geology, and not uncommonly management makes its own "geological" decisions. This kind of situation may take years, even with understanding, to correct.

### WE LOSE BY DEFAULT

I would now like to discuss a serious consequence to our profession of our inadequate depth and breadth of training. It has long meant the loss to the profession of jobs which logically should come to it, jobs which the geologist has lost by default to other skills with a broader, more basic training. As a result of lack of training in the basic sciences, many geologists are seeing their rightful field preempted by physicists, chemists, biochemists, mathematicians and engineers. Companies are even turning to statisticians for analyses, forecasts etc., and other problems the fundamental basis for which lie in geology! Beautiful, logical-appearing pictures can be set up, with just about all the answers anyone might like to have.

The more important problems and the highest awards for service commonly go to other skills. Not only do their men get the awards, but their science and their skills get the public and national acclaim, even

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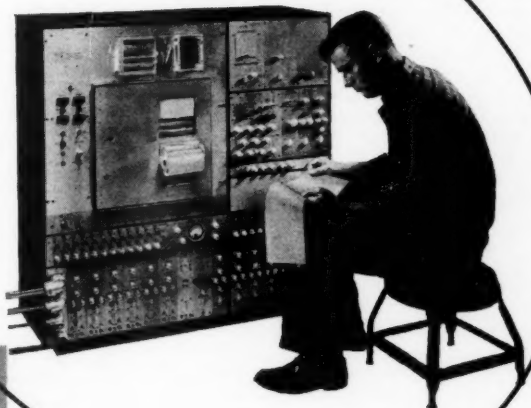
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## UNEMPLOYMENT (Cont. from page 34)

though their decisions concerning geology may have little or no basis in fact.

Another of our failures lies in the fields of public and government relations. Our science, the science of the earth, deals basically with the ultimate source of all man's wealth and well-being; yet our public and government relations could scarcely be poorer. Let us not forget this: We have every reason to be proud of our science, and to expect a public and national consciousness of its fundamental importance. Implementation by adequately organized schools in geoscience and the training of adequately trained geoscientists would bring real public acceptance and many more jobs. Everyone has heard of the comparatively new field of electronics and its engineers, yet the depth and breadth of knowledge required for a true understanding of geology is vastly greater than that for electronics. Geology is not a specialized branch of one science. A true understanding of geology and geologic processes can come only from sound training in many other branches of science.

We are today making efforts in various ways to interest young men in geology and a geological career. This is all to the good. However, I have good reason to know that we are not doing as good a job of early education in science as in some other countries. Actually a youth of 7 to 17 is as much or more interested in science, and is as adept at mastering its concepts as he might be in college, where altogether too much of our science training is started. There is an unreasonable amount of lost years and wasted time. But while we are arousing interest we should also advise the would-be geologist on the need for a sound training in depth and breadth for a successful career. Instead, too often the other end is left wide open by reason of the inadequate capacity of so many of our colleges for providing sound training, and because of an incomplete schedule of training of far too many students in even the best colleges.

### RAISE PROFESSIONAL STANDARDS

Unless we upgrade our professional standards to the point of public attention and acclaim we cannot expect to attract the outstanding among our youth, for they have a way not only of wanting to know but of finding the truth. The only way to bring glamor and public acclaim to the science of geology is to upgrade and strengthen it as a science and, *ipso facto*, upgrade the caliber and the capacity of those who practice the science.

Today, the various fields in physics, nuclear physics, astrophysics, instrument development, physical chemistry, biochemistry, bacteriology, engineering and the development aspects are all interestingly advertised. They are glamorized on the radio, on television, in the press, in fiction, and even in the comics. All of this tends to give the young man of highest talents, and of course his parents, the idea that unless he goes into one of these glamor fields he will be wasting those talents.

Of course not every young man who takes geology should make it his career, any more than all majors in English should become writers or teachers of English, or every biologist should become a doctor. Geology by its very nature happens to be one of the very finest cultural courses in a college's privilege to give. Many wander into geology because of its unique cultural appeal, attracted also by the fact that they do not find the standards as high as in other sciences. By no means should all of these people follow geology as a career. Many might better go into business.

### INDUSTRY'S STAKE

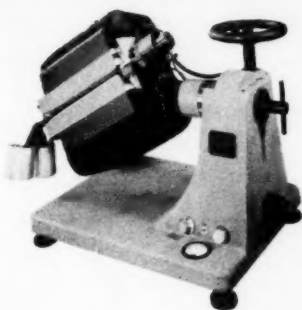
Industry can do much to help the situation, and incidentally help themselves, by demanding high standards; by setting high standards in their own training; by contributing in one or more of the many possible ways toward education and research, including the loan of highly trained personnel for lectures, etc.; by more working contacts with faculty men; by encouraging fundamental research in colleges and visits to company research laboratories; by sharing knowledge; by employing on a more even keel, rather than in strong spurts and long stops; and by keeping the colleges and youth better informed on the potential demand for technical talent.

So much stress has been laid on the serious need to upgrade geologic training and the caliber of the geologist that some in academic circles might take what I have said as condemnation of their efforts. This is far from my intention. A majority of the schools have performed well, considering the strong competition for talent that they have had to contend with and the limited amount of support given them. Industry and the general public are prone to retreat from support as outside their obligations. It might be well for them to remember that in countries whose ideologies we abhor, the scientist, the teacher, and the researcher are recognized as the first concern of the nation, rather than as some secondary consideration, and ample support of them is extracted from industry

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**UNEMPLOYMENT** (Cont. from page 36)  
and the public. These are matters of vital concern, because progress as a nation depends on the standards set in fundamental education.

#### LICENSING DOUBTFUL CURE

Finally, there are a growing number of geologists who believe that our troubles may be taken care of by licensing, or registration as some prefer to call it. Usually the same people think that we should resort to accreditation of colleges and universities as another means of upgrading our profession. These are devices which would have no desirable effects without implementation. Let us remember that it is the implementation, not any magic form that will bring the results. It is debatable whether implementation can be done any better under such cloaks as licensing and accreditation, since there are simple ways of accomplishing our aims. While it is doubtful that licensing will bring jobs, one may be sure that sound training will.

The need for licensing, such as exists for architects, civil engineers, safety and sanitary engineers, structural engineers and others who deal with projects involving public safety, does not exist with geologists. As one of my correspondents put it: "Licensing tends to put a stamp of approval on a person without regard to his character, attitude, devotion to his profession and duties and to his basic ability".

I am not convinced at present that we need to resort to licensing. I am in the process of studying it, which I think we need to do very thoroughly, objectively and dispassionately. If we are destined to follow that route we should be prepared to agree on exactly what we want. It would be far better to have a profession-drafted than a politician-drafted law.

In conclusion, the record seems to clearly tell us, in fact common sense dictates, that geologists cannot rely on industry, or on government, or on any other entity to take care of their problems. It should be clear to us that the outcome of such caretaking would be sorry indeed. It is up to the geologists themselves, in their societies, associations and institutes, working through their local and national committees, and through their councils and executive committees to analyze their problems seriously and objectively, decide on the remedies and proceed to implement them. To do this geologists will have to overcome their singular independence of temperament, particularly with regard to matters affecting their common welfare, and determine to pull together. Clearly only those are helped who help themselves.

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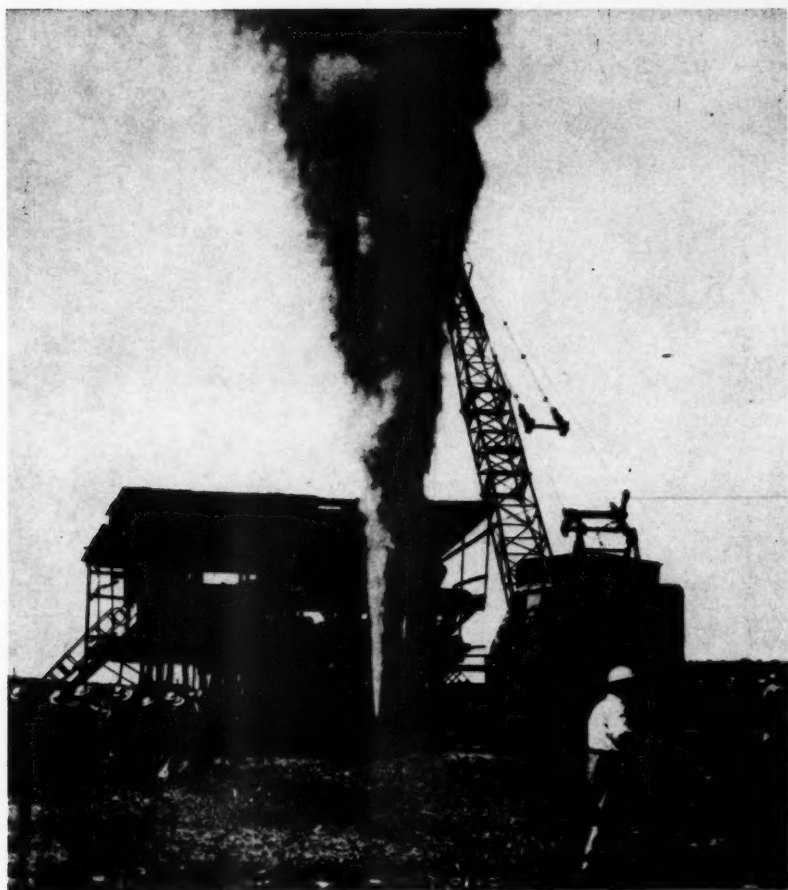
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**BOX 552. GEOLOGIST, Ph.D., 34, married.** Desires permanent teaching position in small to moderate size school and town, preferably in south or west. Broad geological background in teaching and research, especially in sedimentary rocks, principles of stratigraphy, petroleum geology, and mineralogy. Presently employed as geologist by major oil company.

**Box 585. GEOLOGIST, experienced explorationist** with diversified background in the Four Corners, Panhandle and Permian Basin. Previous work includes sub-surface, supervision and seismograph.

**BOX 607. GEOLOGIST, B.A., 30, family, 3 years** engineering geology experience; structural geology, ground water, materials investigations, reports. Also 2 years surveying experience. Desires position in mining, exploration, or engineering geology.

**BOX 608. Ph.D., retiring after 20 years** tropical service with major company, desires moderate teaching load: geography, photo interpretation, physical, structural, stratigraphic, economic geology. Protestant churchman. Wife competent librarian. Academic environment and privileges would outweigh high salary. Southwest preferred.

**BOX 609. GEOLOGIST, 27, married, B.S.** in June 1959. General geology background. Desires domestic or foreign position. Resume on request.

**BOX 610. PALYNOLOGIST, MS, 34, married,** five years experience in Spore and Pollen field. Desires to relocate with company with such a program or interested in such. Would consider university undergraduate teaching with possibility of research and advanced degree in Palynology.

**BOX 611. ASSISTANT PROFESSOR, Ph.D.** major university wishes to teach in college or university in more desirable area. 3 yrs. teaching and 6 yrs. varied industrial experience. Primarily interested marine geology, paleontology, sedimentation, mineralogy. Active researcher, member prof. societies. Resume on request.

**BOX 612. MUSICIAN and composer: full professor;** major university; Yale graduate; 13 yrs. teaching experience; former violinist in internationally famous string quartet; Guggenheim Fellow; married; 2 children; wishes to teach in college or university in more desirable area; amateur geologist; would appreciate your bringing this ad to the attention of your Music Department. Resume on request.

**BOX 613. PHOTOGEOLOGIST, B.A., 33, family.** Some graduate work. 4 years exploration experience in Alberta Basin and Colorado Plateau and research in fracture studies. Some field and well sample work. Desire a position in petroleum exploration and/or research. References upon request.

**BOX 614. RETIRED PROFESSOR of Geology** desires a one year connection with a school in the south or southwest. Married, 68 years of age, active, excellent health. Is prepared to teach physical geology, optical mineralogy, petrography of igneous, metamorphic, sedimentary rocks, and engineering geology. Would teach historical geology or mineralogy.

**BOX 615. GEOLOGIST, 31, Ph.D.** by June 1959. Desire teaching position in college or university preferably in northern, midwest or New England states. Principal fields: petrology, geochemistry, mineralogy, structural geology. Some teaching and considerable field experience, as well as training in spectrography. Available Sept. 1959.

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**BOX 623. PETROLOGIST, B.A., 1943, Ph.D. 1952,** desires teaching position in liberal arts college with high academic standards and with enrollment about 1500-3500 or more; prefer southern New England, Middle Atlantic-Great Lakes, or Pacific Coast.

**BOX 624. PETROLEUM GEOLOGIST, 8 1/2 years** Gulf Coast, 1 year Rocky Mtn.; M.S., trained in administration, developing exploration programs, developed and submitting prospects; desires position with company entering exploration, or expanding; prefer Houston, consider any area.

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## POSITIONS WANTED—Continued

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BOX 628. MICROPALAEONTOLOGIST, B.S., 32, experienced in S. Louisiana, presently consulting. Will consider overseas position.

BOX 629. M.S., GEOLOGY, Oklahoma U., 28, single, have fulfilled service obligations. Desire position in the field of geology or geophysics (seismograph) domestic and/or foreign.

BOX 630. GEOPHYSICIST, B.S. in geology, 11 years seismic experience including 4 years party chief and 3 years review work. Presently employed. Wants responsible job requiring both administrative and technical ability. Will go anywhere. Rocky Mountain area preferred.

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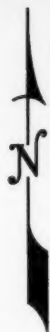
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